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STANDING ROOM ONLY?

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EDWARD ALSWORTH ROSS

PROFESSOR OF SOCIOLOGY, UNIVERSITY OF WISCONSIN

**Author of "SOCIAL CONTROL," "SOCIAL PSYCHOLOGY,"
"THE PRINCIPLES OF SOCIOLOGY," "THE CHANGING
CHINESE," "RUSSIA IN UPHEAVAL," etc., etc.**

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INTRODUCTION

Whether a people's economic lot improves or worsens depends at bottom upon two factors:

- A. The growth of population.
- B. The increase of food production.

For more than a century B has been outrunning A among the progressive peoples of the world; so the outlook has been cheering. A, however, depends in turn on two variables:

- a.* The birth-rate.
- b.* The death-rate.

Now, in forty years the advanced societies have experienced an astounding fall in the death-rate. They have achieved a new longevity, which is destined to be shared soon in varying degrees with all important sections of mankind. Wherever it arrives population leaps like a startled hare. Unless *a* falls as well as *b*, there is no prospect of B being able to keep up with A for long. Certain enlightened peoples, to be sure, have their reproduction under control. But so far probably less than one sixth of the human race has applied any brake to its fertility. Unless this practice spreads much faster than it seems likely to do, overpopulation, and therewith misery and degradation, will sensibly increase throughout large parts of the world before the close of our century.

How little the pioneer microbe-quellers divined such an outcome of their exploits!

Population pressure is not only very unequal over the globe, but the growth tendencies of peoples and races are so unlike that inequality of population pressure is bound

to become greater. Emigration will therefore become popular with the congested peoples. Tempted by the speed, cheapness, and safety of overseas movement, and beguiled by the patter of steamship agents and their runners, growing population surpluses will stream hither and thither about the earth. Menaced as to like-mindedness, standards of living, and even self-perpetuation, the advanced peoples will be forced in sheer self-defense to bar out mass immigration. So, strangely enough, thanks to the recent brilliant victories over disease, the twentieth-century attitude toward the international flow of human beings in quest of a chance to earn their bread bids fair to mock the dreams of the great humanitarian thinkers of the last century.

As underpinning for the above theses I offer an elaborate examination of the dynamics of population. Much as I value the work of Malthus, I venture a fresh attack upon his problem because for several reasons his famous "Essay" is no longer fit to guide us.

1. Malthus's "law" that population increases in a geometrical ratio whereas subsistence can be increased only in an arithmetical ratio was rejected long ago. What he was driving at is the economist's "law of diminishing returns."

2. Malthus was "stumped" by the query why a benevolent God created us with a bent to multiply faster than we can enlarge our food supply. To-day in the light of evolution we have no difficulty in seeing how this superfecundity may have become established.

3. In Malthus's day those too intelligent to regard epidemics as God's chastisements held to the filth theory of human disease. The germ theory has been ascendant no more than fifty years.

4. At the dawn of the nineteenth century when Mal-

thus was writing no one dreamed of victories over human ailments that would cut the death-rate to a half, even to a third.

5. Malthus offered no means of keeping down numbers save the postponement of marriage. Contraceptive means of regulating family size lay in the womb of the future.

6. Unable to imagine steamship and railroad, Malthus could not foresee how his people would set their table with food from all over the globe and how famine would disappear from the horizon of civilized peoples.

7. Malthus conceived that England might "in the course of some centuries contain two or three times its present population and yet every man in the Kingdom be much better fed and clothed than he is at present." Thanks to the new forces, his people doubled in fifty years and again in the next sixty years, while their plane of living rose.

8. In his day no one foretold such facility of overseas movement that surplus people in the congested parts of the earth would migrate in vast streams toward the roomy, democratic, and well governed lands.

9. Since Malthus much has been learned as to the possibilities of and the limitations upon food production.

10. Although he championed popular education, Malthus never dreamed of such a laboring population as we know to-day; ambitious and aspiring, reading newspapers and advertisements designed to breed in them new wants.

11. Malthus did not foresee the development of democracy to such a point that in some countries the laboring class are practising prudence in the matter of family, not from dread of want, but from fear of losing the style of living essential to one's standing in the eyes of others and hence to one's self-respect.

12. Malthus had no presentiment of women becoming so emancipated that their revolt against the needless an-

guish and mortality excessive child-bearing inflicts upon them would appreciably lower the birth-rate.

13. Finally, Malthus could not foresee that the extension of the rule of the advanced nations over the backward would cause human life to be conserved among the blindly multiplying peoples of Asia and Africa with much of the intelligence and zeal with which it is conserved among the prudently multiplying peoples of Europe and America.

Recognition of these post-Malthusian developments emboldens me to tackle the dynamics of population as if Malthus had not already left his enduring mark upon it.

EDWARD ALSWORTH ROSS.

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Part One

POPULATION

CHAPTER I

HOW FAST CAN MAN INCREASE?

IF Thomas Robert Malthus (1767–1834), the first thinker to insist that, as a regular thing, the happiness of the masses is jeopardized by their prolificacy, had broached his ideas to the men of the Old Stone Age some 50,000 years ago, they would have hooted his contention that *always population tends to multiply faster than the means of subsistence can be increased*. They would have protested that they met untimely death from disease, wild beasts, or other men far oftener than from hunger. "On the whole," they would have said, "we produce no more young than we need in order to assure self-perpetuation."

Nor in the early Middle Ages say, the twelfth century, did the black worries of life center about the question of victuals. "The miserable chaos into which the old civilization sank after the barbarian invasions, the orgies of massacre and plunder, the almost total oblivion of medical science, and the pestiferous condition of the medieval walled town, which could be smelt miles away, averted any risk of overpopulation. Families were very large, but the majority of the children died. Millions were swept away by the Black Death; millions more by the Crusades. Such books as that of Luchaire, on France in the reign of Philip Augustus, bring vividly before us the horrible condition of society in feudal times, and explain amply the sparsity of the population." ¹

¹ W. R. Inge, "Outspoken Essays," 1919, p. 67.

Again, right after the visitation of the Black Death in the fourteenth century would have been a poor time to warn against large families. Here are the findings of Hecker: ²

Cairo lost daily, when the plague was raging its greatest violence, from 10 to 14,000; being as many as, in modern times, great plagues have carried off during their whole course. In China, more than thirteen millions are said to have died; and this is in correspondence with the certainly exaggerated accounts from the rest of Asia. India was depopulated. Tartary, the Tartar kingdom of Kaptshak, Mesopotamia, Syria, Armenia, were covered with dead bodies—the Kurds fled in vain to the mountains. In Caramania and Cæsarea, none were left alive. On the roads—in the camps—in the caravansaries—unburied bodies alone were seen; and a few cities only remained, in an unaccountable manner, free. In Aleppo, 500 died daily; 22,000 people and most of the animals were carried off in Gaza, within six weeks. Cyprus lost almost all its inhabitants; and ships without crew were often seen in the Mediterranean, as afterwards in the North Sea, driving about, and spreading the plague wherever they went on shore. It was reported to Pope Clement, at Avignon, that throughout the East, probably with the exception of China, 23,840,000 people had fallen victims to the plague. . . . In Padua, after the cessation of the plague two-thirds of the inhabitants were wanting; and in Florence it was prohibited to publish the numbers of the dead, and to toll the bells at their funerals, in order that the living might not abandon themselves to despair.

The researches of Thorold Rogers show that in the England of five centuries ago food shortage was by no means the chief bar to population growth.

The habits of the people were favourable to pestilence. Every writer during the fifteenth and sixteenth centuries who makes

² J. F. K. Hecker, "Epidemics of the Middle Ages," 1844, pp. 23, 26.

his comment on the customs and practices of English life, adverts to the profuseness of their diet and the extraordinary uncleanness of their habits and persons. The floor of an ordinary Englishman's house, as Erasmus describes it, was inconceivably filthy, in London filthier than elsewhere, for centuries after these events. The streets and open ditches of the town were polluted and noisome beyond measure. The Englishman disdained all conditions of health.³

Very likely there have been *many* periods in which all man's fecundity was needed to continue the breed, and the difficulty of obtaining sustenance was by no means the chief source of his troubles. Any species which has survived to our time must inherit a fecundity which sufficed to carry it through the worst conditions it ever was called upon to undergo; otherwise that species would not be here to-day. So is it with man. He is heir to a fecundity which enabled his breed to survive the direst straits it ever experienced, to get it past the cave bear, the Ice Age, the microbes. That this fecundity is excessive for the needs of subsequent easier times gives rise to "the population question." After every period of great gains in security and length of days this question bobs up anew.

THE DEBATE OVER THE ORIGIN OF MAN'S EXCESSIVE FECUNDITY. Malthus made his case against reckless propagation about the beginning of the last century when British statesmen were losing sleep wondering how the swelling population of their towns could be fed. In his time he had seen the birth-rate of his people rise 6 per cent and the death-rate fall 25 per cent. Since it is obvious that on an island not made of gutta-percha human increase must reach a limit, he contended that, unless births are fewer, deaths will be increased in number by "checks"

³ J. E. Thorold Rogers, "Six Centuries of Work and Wages," 1884, p. 118.

generated or aggravated by human density. In other words, war, famine, and disease will get so bad that population ceases to grow. But in the third decade of the nineteenth century, thanks to industrialization and town crowding, the English death-rate rose and stayed up for sixty years. At the same time a colossal overseas movement of food, stimulated presently by the repeal of the Corn Laws, made subsistence easier than ever to procure. So, in the third quarter of the nineteenth century, the impression spread that the course of events was falsifying Malthus's prophecies. Then in the closing decade of the century, when all the small-fry thinkers deemed Malthus's doctrine "exploded," began a tremendous fall in the death-rate which has once more thrust the population question into the foreground.

In Malthus's time no one doubted that a benevolent God, some six thousand years ago, created man to be happy. As an orthodox clergyman Malthus was therefore hard put to it to account for our being launched into existence with a sex thirst that is a snare and a thwarter of human happiness.⁴ Such a discrepancy seems to reflect upon the goodness or wisdom of God. Malthus could only argue weakly that man must have been equipped with his imperious urge in order that by controlling it he might have opportunity to show character and prove himself a moral being.

In the light of what we now know as to the path by

⁴ Charles Darwin got his key to the development of species, the "principle of natural selection," from reading Malthus's "Essay on Population." As he read, it dawned upon him that if all species are as overfecund as Malthus shows man to be, there will be a struggle for existence. Some individuals will go to the wall, while others survive; and among the survivors will be those, otherwise fit, who happen to possess any advantageous variation in organ or trait. Thus without design or artifice every species is constantly molded into completer adaptation to the life conditions imposed by its environment.

which man has come up, his excess of fecundity appears to be not absolute but relative. It grows with progress in security, in peaceful association, in medicine, hygiene, and sanitation. In each generation more individuals survive the perils of infancy, more reach adult life, more complete their reproductive period. So, normally, each generation has a bit more of excess fecundity on its hands. Writing to-day, when the infectious diseases are two-thirds whipped and mortality is but half of what he knew, Malthus could make a far stronger case than he was able to make in his time.

Of course, the foregoing is wasted on those who deny that man has evolved and insist that he was created all-of-a-piece, just as he is. They contend that, since "God is good," it is impossible that our procreative bent should ever prove a snare. Within the divinely ordained institution of marriage men and women may safely "follow nature." Hence, there is no "population question" save for peoples too lazy, or wasteful, or vicious, or stupid, to keep their food production ahead of their increase of mouths. Since no people is perfect, the orthodox are able to represent even the appalling poverty of the Chinese myriads as due to *under-production* rather than to *over-breeding*. Thus all is shown to be for the best; "God sends" whatever children the wedded summon through the gate of life.

HUMAN FECUNDITY DOES NOT DECLINE WITH THE ADVANCE OF CIVILIZATION. In his "Principles of Biology" (1867) Herbert Spencer argued that civilization individuates and that, as individuation progresses, reproductive power declines. Hardly had the orthodox laid this salve to the abrasions left by Malthus ere the careful Darwin wrote (1871), "There is reason to suspect that the reproductive power is actually less in barbarous than

in civilized races." It looks now as if he were right. The women of the most civilized peoples, if anything, are more fruitful than those of the less advanced. Theal found that 984 women of the Bantu blacks in South Africa had borne an average of 5.6 children. An investigator discovered that 160 Chinese wives all over fifty years of age had given birth on an average to 7.5 children. In Baroda, one of the native states of India, the average number of births for 28,011 completed families was $5\frac{1}{4}$. Four fifths of these women became wives at the age of thirteen or fourteen years. In the Punjab 34,561 unions of a duration of thirty years or more show 5.68 to a union. Ten thousand Bengal families in which the wife had been married at least thirty-three years yielded (including stillbirths) 6.34 progeny to a family. The genealogies of New England families show that in the first half of the eighteenth century the births per wife were 6.83. About 1912 an investigation of prolificacy in twenty-one rural counties of Minnesota showed that the wives born in Poland had produced on an average 7 children in the course of $14\frac{1}{2}$ years of married life. When completed these families would certainly average 10 or more children.

From English data J. M. Duncan⁵ calculated sixty years ago that fertile healthy women, living in wedlock from fifteen to forty-five years of age and accepting all the consequences, will average 15 births. From the returns of the British 1911 census Stevenson calculated that the average number of children born to English couples married in the decade 1861-71 and surviving to 1911 was 6.79; while for couples married in the decade 1851-61 (when birth-control was little known) the number was 7.28. While wives married at age 20-24 bore 5.83 children, those wedded at age 15-19 bore 7.51. Dunlop found

⁵ "Fecundity, Fertility, Sterility, and Allied Topics," 1866.

that in Scotland women of age 20–24 who married 1861–65 became the mothers of 7.8. In New South Wales the progeny of such unions was 8.32. The palm went to Scottish women married at the age of seventeen; their average was 9.02 children. The 1920 census of Norway showed that for surviving couples who were married before 1888, the bride being but eighteen or nineteen years old, the type family was 10 children. In Australia the births to wives married between fifteen and eighteen years of age and whose marriage had endured twenty-five to twenty-six years averaged 10.45. Doubtless similar figures could be found among the peoples of Central or Eastern Europe. *So let us not pretend that the population problem solves itself as civilization advances.*

PEAK RATES OF HUMAN INCREASE. In a healthy population of normal make-up in age and sex, whose only check on fertility is durable one-mate marriage, the birth-rate will range from 50 to 60 per thousand per annum. Despite the fact that the more backward peoples do not collect vital statistics, birth-rates in the neighborhood of 40 per thousand are not hard to find. This figure measures the fertility of Saxony thirty years ago, of Bosnia and Bulgaria just before the war, of the Soviet Union in 1923, of Ceylon in 1917. In this class are Chile, the Central American republics, and the West Indies. Birth-rates around 45 we come upon in British Honduras in 1920 (45), Santo Domingo in 1910 (46.3), pre-war Rumania (43.1), pre-war Egypt (43.6), pre-war Russia (45.6), Serbia 1886–95 (43.4), Hungary 1876–85 (44.4), and Guatemala 1876–85 (45.2). A birth-rate of 49 was registered by Russia, 1886–95, and in India at about the same time. It is so difficult to get a prolific people to register all births that most of these figures should be revised up-

ward. Probably fertility comes nearest to natural fecundity in French Canada where the devout *habitants* are forbidden by their priests to attempt any form of control, even marital continence, over the size of their family. Quite often a priest, after returning for his parish a number of births which shows a rate of from 50 to 55 per thousand, adds the caution, "many births are not reported." Certain parts of Quebec and certain regions in the Orient and Oceania appear to hold the world's record for prolificacy.

Now as to deaths. The enlightened peoples have cut their deaths per annum to 15, 13, even 11 per thousand; but such low rates are not for the spawning peoples, which generally are ignorant, superstitious, and fatalistic—poor soil for life-saving programs. Then, too, a prolific population will not only include a host of little children—so frail and perishable—but frequent pregnancies and large families bring always in their train a high infant mortality. Even in this Golden Age of public hygiene it is safe to predict that no people with an annual birth-rate of 50 could have a death-rate below 15—which gives an annual growth of $3\frac{1}{2}$ per cent per annum. Such a population will double in about twenty years—which means that at the end of a century there would be sixteen times as many as at the beginning. In the last decade of the eighteenth century, when foreign immigration was negligible, the increase of the American people averaged 30.5 per thousand a year, while in the first decade of the nineteenth century the rate was 31.5 a year. So far this performance holds the record.

We know of no contemporary population which actually attains this rate of natural increase. All the peoples clever enough to achieve a low death-rate refuse to multiply in the blind way animals do. So many couples curtail family

that by no means all the nation's fecundity is brought into play. The highest annual rate of natural increase attained by any country since the beginning of authentic vital statistics is that of New Zealand, 26.6 per thousand for the decade 1876-85. Only a country of recent settlement with few old people could make such a showing. Argentina in 1913 had a natural increase of 21.3; Quebec and Manitoba report an excess of births over deaths of about 20; Russia, whose margin was 16 in 1913, reports 19 in 1923. Just prior to the outbreak of the war, Rumania and Bulgaria had a margin of 18.5. Thanks to her combining a fairly high birth-rate with a very low death-rate Holland in 1920 achieved a natural growth of 16.3.

To sum up: *Utilizing the life-saving means now available, a flourishing and enlightened modern population, which welcomed large families, might grow from its own loins at a rate which would double it in twenty years.*

CHAPTER II

THE MORTALITY OF OLDEN TIME

LONG ago the dying Darius observed that the world has a thousand doors through which its tenants continually pass away. True, but *how early* does humanity disappear through these doors? Are most of them called away from a scarce-tasted banquet, or are they summoned after they have eaten their fill? For about half of living mankind we can answer this question, but the past is very nearly a sealed book.

DUSK HIDES THE MORTALITY OF LONG AGO. Compared with the immense antiquity of our race, recorded history is but the story of a month or two in a man's life; yet even history sheds little light on how long our forefathers lived or what they died of. Not far can we see up the Valley of Death. Near two centuries ago there began to be illumined patches, which since then have become larger and more numerous. Shafts of light touch here and there in the Middle Ages. Farther away the haze thickens, and only by adjusting the strong field-glasses of mythology can we make out the distant scene. Back of classic times the landscape is hopelessly shrouded.

From the distant ages there seep down to us gruesome tales of pestilence—the literary “thrillers” of the time—but of everyday mortality and longevity the past tells us little. After listing the diseases mentioned by the medieval chroniclers, Creighton, the historian of epidemics in Britain, says: “One great chapter in the history of disease, the sickness and mortality of infants and children, is al-

most a complete blank. It ought doubtless to have been the greatest chapter of all."

We know now that for Christian Europe—seeing that the influence of the church had put infanticide and abortion under the ban—a stationary population signified always an enormous infant mortality. In fact, whether a people dwindled or waxed depended on how its wee ones fared, for of births there was never lack. If a population overflowed in migrations and invasions, you can be sure its children thrive. Yet the fate of infants is something of which we have no statistical knowledge prior to the latter half of the nineteenth century!

DISEASE AND CIVILIZATION. Diseases have multiplied along man's path as in a hard northern winter wolves collect about a migrating herd. Carr-Saunders has amassed much evidence showing that races under primitive conditions are healthy. Thus he quotes Davidson:

Australia presents us with the spectacle of a continent, from the pathology of which entire classes of diseases, prevalent in other divisions of the globe, were, until comparatively recent times, completely absent. Thus the whole class of eruptive fevers—small-pox, scarlet fever, and measles—so fatal elsewhere, were unknown. Epidemic cholera, relapsing fever, yellow fever, whooping cough, and diphtheria were equally absent, as also was syphilis. . . . Leprosy was absent from the southern continent.

It has been asserted that the only lethal disease of importance present in America before the visit of Columbus was malaria, and it is worthy of note that malaria is an insect-borne disease. . . . The marked liability on the part of primitive races to common European diseases points strongly to the fact that no immunity had been evolved against these diseases because they were formerly unknown.¹

¹ A. M. Carr-Saunders, "The Population Problem," 1922, p. 157.

According to Bonwick, "there are strong reasons to believe that before connexion with the whites, the aborigines [Tasmanians] were as healthy as well as a happy people." Of the Australians Carr says that "as a rule the health of the blacks in their wild state was excellent." Longevity may be considered as evidence of good health, and of the presence of aged people in Australia many observers speak. "From numerous instances it would appear that the former generations were fairly long aged. Almost every small community would have in it two or three men or women over seventy years of age, and here and there some centenarians would be met with." So, too, Burchell records having noticed many old people among the Bushmen. Writing of the Eskimos in a medical journal Smith calls them "uncommonly healthy." This is the opinion that one gains from other accounts, some of which specially mention longevity as a characteristic. "The North Americans are in general robust and of a healthful temperament, calculated to live to an advanced age." Another author says that the Indians east of the Rocky Mountains are "in general subject to few diseases." Krause quotes the opinion of a doctor who lived among the Thlinkets in the year 1836 to the effect that they were a strong, healthy people. Of the Shushwap we are told that they were formerly healthy and lived to a great age. Hill Tout sums up the situation with regard to the Salish as follows: "the great age, to which both men and women formerly lived, shows the vigour of the race and the general wholesomeness of their lives and condition." "The Nootkas are generally a long-lived race, and from the beginning to the failing of manhood undergo little change in appearance. Jowitt states that during his captivity of three years at Nootka Sound, only five natural deaths occurred, and the people suffered scarcely any disease except the cholic." Powers, referring to the Californians as a whole, calls them "a healthy, long-lived race," and Baegert speaks of them as "strong, hardy, and much healthier than the many thousands who live in daily abundance" [in civilized countries]. Among the Abipones "the diseases which in Europe fill houses with sick persons and graves with dead bodies are unknown here. . . . You scarce hear once

in three years of any of them dying of a fever, pleurisy, or consumption." Hardt mentions the good health of the Botocudos and King and Fitzroy consider the Patagonians to be very healthy.²

Catlin says that the Mandans were "undoubtedly a longer lived and healthier race" than most civilized peoples. According to Le Beau the Iroquois were "practically never ill"; in spite of a climate that he himself found trying, "they were," he says, "nearly all strong and robust," and had few diseases. "On the whole, the Yuchi, men, women, and children, are a remarkably healthy set of people." The Shawnees are "very healthy and are exempt from many diseases." Spix and Martius, with their extensive knowledge of the Indians of Brazil, say in general that "the Indians are seldom sick and generally live to an advanced age."³

One cause of this hardihood is the ruthless weeding out of the weaker children by unsuitable food, improper treatment, exposure, and certain tribal customs such as plunging the infant into cold water or snow. But another reason is that the germs of our chief diseases are not among them. The fearful execution wrought by the white man's diseases among the splendid island races of the South Seas after Captain Cook visited them is notorious. As for the Eskimos, it is sure death for them to settle among us.

THE BIRTH OF DISEASES. Many of the pathogenic micro-organisms which harry us may have gained their power over man not so very long ago. In the evolution of such species our day is as a thousand years; so there has been time enough for bacteria originally harmless to turn malign. The most ancient centers of deadly infectious diseases we know are the valleys of the Nile, the Eu-

² Work cited, pp. 158-159.

³ Work cited, p. 172.

phrates, the Ganges, the Hwangho. And just here it was that men began to live in walled cities, of an overcrowding and filthiness no one can imagine until he has visited the East. What golden opportunities here for species of bacteria which infest plants or vermin or foul water or spoiled food to become adapted to a parasitic life within the human body! Perhaps this is why such diseases as leprosy, cholera, smallpox, and the bubonic plague can be traced to Oriental centers, where for a long time they were endemic before they launched into a world career. In developing physiological resistance to such germs the Europeans seem to have been behind the Southern Asiatics and the Nordics behind the Mediterraneans, just as the native races of the Americas and the South Seas were behind the Nordics.

THE DYING DOWN OF DISEASES. That microbes and men are evolving with reference to each other seems to be borne out by the fact that sometimes a disease departs as mysteriously as it came. The "sweating-sickness," before unknown, dropped upon England like a panther from a limb for a single season in 1485, again in 1508, 1517, 1528, and for the last time in 1551. In 1529 all Central Europe was visited by the "English sweat," the fatalities varying from not more than those of our influenza to the deadliness of malignant typhus. In England it gained the nickname "stop-gallant" from its sparing the humble and decimating the upper classes. "For there were some dancing in the Court at nine o'clock that were dead by eleven." Since 1551 this disease has been extinct.

The bubonic plague (Black Death) pounced upon England in 1348, and, after killing half the population in fourteen months, became domesticated. For more than three centuries it was never long absent from one part of Britain or another. It came to be peculiarly the disease of

the poor in the towns, although not unknown in the villages and country houses. Following an outbreak in London which took 75,000 lives, the plague vanished; after 1679 Britain knew it no more. Western Europe has been free from it since, and during the nineteenth century it ravaged in Europe only Turkey and South Russia.

Syphilis and tuberculosis appear to be losing power over us in much the same way that the sweating-sickness and the plague lost their power over our ancestors.

THE WASTE OF LIFE IN CITIES. Before they caught infection from the ancient hives of men, our ancestors lived about as long as we do. A twelfth-century view of Ireland describes the inhabitants as "leading a purely pastoral life and living more upon milk than upon meat. At the same time there was little sickness; the Island had little need of physicians." It was in the cities that the loss of life in the olden days reached figures to us well-nigh incredible. Until late in the eighteenth century it was a rare thing for London's baptisms to exceed her burials over a series of years. Ponder this fact from Nicholson: ⁴ "In the sixteenth century there were considered to be more kites scavenging about London Bridge than anywhere else in the civilized world. Now it is very nearly a hundred and fifty years since the last pair deserted the metropolis, not from any increase of persecution, but because their livelihood had disappeared."

THE BATTLE FOR HUMAN LIFE IN LONDON. In 1750 in London one in twenty died; now in a year one in eighty dies. The story of this abatement throws a strong light on modern success with life in cities. For the first half of the century the burials of London were to the christenings

⁴ "English Review," Vol. XXXIX, November, 1924, p. 644.

roughly as three to two. From 1750 the proportion grew steadily less until in 1790 for the first time the christenings exceeded the burials.

The decrease in burials was greatest among children. For the twenty years 1730–1749 the burials of children under five were 74.5 per cent of all the children christened. From 1750 to 1769 this proportion was reduced to 63 per cent, from 1770–1789 to 51.5 per cent, and from 1790–1809 to 41.3 per cent.⁵

Not a few measures contributed to the improvement in the health of London.

The marked rise of mortality 1720–50 was probably due to the popular orgy of alcoholism following the great cheapening of spirits. Gin shops advertised: "Will make you drunk for 1 d.; dead drunk for 2 d. Clean straw to lie on for nothing." Hogarth's famous series of cartoons, "Beer Street" and "Gin Lane," satirized this period. The heavy taxing of spirits in 1751 was followed by a great decline in the consumption of gin.

Thanks to the untiring efforts of good Jonas Hanway, dependent children were sent into the country to be cared for instead of being herded in workhouses. The act of 1767 directed that all children under six, within three weeks of their reception by the parish authorities, were to be sent out not less than three miles from any part of London, and all children under two years not less than five miles. It is estimated that by this means the London burials were reduced on an average twenty-one hundred a year. The poor called the law "an act for keeping children alive."

Then came "the improvement in medicine and mid-

⁵ This and other citations are from an article by Dorothy George, "Some Causes of the Increase of Population in the Eighteenth Century as Illustrated by London," in the "Economic Journal," Vol. XXXII, pp. 325–352, September, 1922.

wifehood which began about the middle of the century, and was accompanied by and partly due to an extension of medical practice among the poor. The chief factors in this extension were the lying-in charities and the dispensaries." "In the nurture and management of infants as well as in the treatment of lying-in women," wrote Dr. Lettsom in 1774, "the reformation has equalled that of the small-pox; by these two circumstances alone incredible numbers have been rescued from the grave." In the first ten years of the British Lying-in Hospital (1749-58) the deaths among women averaged 1 in 42, among children 1 in 15. Half a century later the deaths had been reduced to 1 in 913 among women and 1 in 115 among children.

The dispensary movement began in 1769. Thereupon "the poor learned something of the rudiments of hygiene, the doctors learned to diagnose the diseases of poverty and dirt. As a result a new current of opinion was formed, small at first, which began to run counter to the generally accepted theory that the London poor were brutal and depraved and that their distresses were due to vice or at the best, improvidence."

Dr. Lettsom writes in 1775: "In the space of a very few years I have observed a total revolution in the conduct of the common people respecting their diseased friends. They have learned that most diseases are mitigated by a free admission of air, by cleanliness and by promoting instead of restraining the indulgence and care of the sick."

After a virulent outbreak of typhus 1800-01 a contagious diseases hospital was opened and steps were taken to cleanse infected houses by whitewashing. Promptly the number of deaths from typhus dropped. In

in the eighteenth century, while by 1815 it was down to less than a third. Before the hospital was opened one typhus patient in four died; but the House of Recovery lost only one in nine.

Besides these achievements of conscious effort, many other factors contributed to improve the health of London. "Contemporary observers lay stress on the less crowded manner of living, the great improvement in the streets of London with the succession of paving Acts beginning 1762, the taking down of the street signs and obstructions which impeded the circulation of air, the greater attention of scavengers and the influence of an improved agriculture in creating a demand for the mud and filth of the streets as manure. The better drainage of London and the increased supply of water and fuel were much commented upon. Excessive drinking declined. The increasing consumption of tea and sugar as the century went on was, in spite of moralists, sometimes admitted to be beneficial. The cowkeepers around London had developed a system for the winter feeding of cows which insured a plentiful supply of milk throughout the year." Greater cleanliness was encouraged by the development of the cotton manufacture which enabled the women to discard the woolen clothes which were universally worn by them, which lasted for years, and which were seldom if ever washed.

Nor was it the cities alone which benefited. In a single century the whole country emerged from darkness into a new day. The great lowering of mortality in England and Wales in one hundred years appears from this table of the ratio of burials to 1000 baptisms cited by Travers Twiss: ⁶

⁶ "Certain Tests of a Thriving Population" (1845), p. 50.

1720-30	1068	1780-90	787
1730-40	1043	1790-1800	747
1740-50	924	1800-05	697
1750-60	858	1805-10	659
1760-70	840	1810-15	612
1770-80	857	1815-20	623

The death-rate for this period has been calculated to be as follows:

1720	29.7	1770	27.9
1730	33.4	1780	28.8
1740	31.7	1785-1795	25.6
1750	28.2	1796-1806	23.1
1760	26.7	1806-1816	20.

The second half of the eighteenth century, then, marks the time of going over from medieval conditions in a country probably as advanced at that time as any in the world.

"TIME MAKES ANCIENT LORE UNCOUTH." It is idle to cling to-day to the maxims and behavior patterns that went with the old mortality, for they do not fit our new situation. When four fifths of the babies grow up, a tenth or a fifteenth occupant of the cradle is not going to be as welcome as when but one fifth grew up. When three births will replace a couple, husbands generally will feel more sympathy with the wife's desire not to be a mere breeding-machine than when it took eight births to yield two adults. When a twentieth of the population are borne to the churchyard each year, there will be no protest if the clergy, without any scriptural authority, denounce as mortal sin any endeavor on the part of married couples to avoid conception. But when only an eightieth are buried in a year and the land is filling as never before, the ar-

bitrary attempt of celibate clerics to dictate the conduct of spouses in the privacy of their bedchamber will be looked upon as a perversion of religion and an insufferable impertinence.

CHAPTER III

THE MUZZLING OF FAMINE

WHEN a people live on Nature's gifts their food supply will fluctuate violently from causes beyond their control. But even after they have gone quite over to food production, the caprice of the seasons may bring to naught the labors of the husbandmen, and there is famine. And famine does more than take lives; it damps reproduction for years. In India, owing to the physical weakness resulting from the long spell of undernourishment endured by the masses, it takes from three to four years to restore the fertility of a badly smitten tract.¹

FOLK HUNGER IN PREHISTORY. Tales of folk hunger were prized assets of the early chronicles, but probably the worst happened before the curtain of history rose. Outside the tropics the food supply must have been in most places very irregular. Declares an expert on early society: ²

Everywhere the Eskimo lives up to the food supply. The Indian hunters of eastern Canada and the corresponding parts of the United States were also in a state of equilibrium, a special student of the subject having shown that from two to four hundred square miles were required to feed a family, and that the population was at the maximum level. So in general, it appears that all hunting cultures, long sustained, show such a balance between the fauna and population. If too many game

¹ "General Report of the Indian Census of 1881," p. 64.

² Clark Wissler, "Man and Culture," 1923, p. 343.

animals are killed one year, a proportionate number of persons starve during the next. . . .

We in America who have lived in its golden age, when there was food for everyone in great abundance, regard it as strange that the lore of all peoples is filled with tales of famine, for we cannot comprehend how such a condition could so often come about. Criminal, ignorant carelessness, we say, and dismiss the subject. But in the history of the race famine is the recurrent condition; everywhere the wolf is lurking behind the door, biding his time. It could scarcely be otherwise, for were the food supply multiplied a thousand fold, the garden spots of the world would ere this have been reduced to "standing room only."

By the time written history begins there are at hand pads to muffle a little the blow of a bad harvest—stored wealth, organized government, sailing-vessels, highways, trade, and other things which make it possible for a local hunger to be relieved by food brought from a distance.

HISTORICAL FAMINES. Yet there are fourteen passages in the Old Testament relating to famine. So long ago as 1750 scholars had listed 254 great famines, all but fifteen of them since the beginning of our era. Here are the worst:

B. C.

436 Famine at Rome when thousands of starving people threw themselves into the Tiber.

A. D.

42 Great famine in Egypt.

650 Famine throughout India.

879 Universal famine.

941, 1022, 1033 Great famines in India in which entire provinces were depopulated.

1005 Famine in England.

1016 Famine throughout Europe.

1064–72 Seven years' famine in Egypt.

- 1125 Germany lost one half her population from hunger.
- 1148-59 Eleven years' famine in India.
- 1162 Universal famine.
- 1344-45 Great famine in India when even the Mogul emperor was unable to obtain the necessaries for his household.
- 1396-1407 The Durga Devi famine in India lasting twelve years.
- 1661 Famine in India when not a drop of rain fell for two years.
- 1769-70 Great famine in Bengal when ten million persons perished.
- 1783 The Chalisa famine in India.
- 1790-92 The Doji Bara, or Skull famine in India, so-called because the people died in such numbers that they could not be buried.
- 1838 Intense famine in the United Provinces of India. Loss of 800,000.
- 1846-47 Famine in Ireland due to failure of the potato crop. Excess deaths, 225,000.
- 1861 Famine in Northwest India.
- 1866 One million deaths from starvation in Bengal and Orissa.
- 1870-72 Persia lost by hunger 1,500,000, a quarter of her population.
- 1874 Intense famine in Rajputana; 1,500,000 perished.
- 1876-78 Famine in India; five millions perished.
- 1877-78 Severe famine in North China; nine and a half millions said to have perished.
- 1887-89 Famine in China.
- 1891-92 Famine in Russia.
- 1897 Famine in India.
- 1899-1901 Famine in India; one million perished.
- 1905 Famine in Russia.
- 1920-21 Famines in China and Russia.

According to Digby ³ the toll of eighteen Indian famines between 1876 and 1900 was twenty-six million lives. Says Professor J. Russell Smith,⁴ "Within this century human bones have been taken to the Indian fertilizer factories by the train load, because whole populations had perished, and not even the most distant kin of the dead remained on earth to bury them."

RECENCY OF FAMINE AMONG OUR FOREFATHERS. The prayers in the English Prayer-book "to be said in time of Dearth and Famine" testify that even "merrie" England lived once in the shadow of hunger. From 1200 to 1500 there were on the average seven famines and ten years of famine to a century.⁵ On April 2, 1586, the mayor of Plymouth writes to Queen Elizabeth's council: "By reason of the Intemperateness of the weather this last summer the price of corn and all grain for the space of three months has been very high and daily increases in these western parties, so that the poorer sort of people, being many thousands, are like to perish for want of relief." ⁶

All these dearths were caused by bad weather. English weather is no better, but English roads, social organization, and farming have improved.

France, less sea-girt than England, suffered longer from local hungers. Not until near the close of the eighteenth century did the brushing away of royal and noble leeches and the improvement of internal transport rid her of famine. Writes the mother superior of a Carmelite convent in 1662:

³ William Digby, " 'Prosperous' British India," 1901.

⁴ "The World's Food Resources," 1919, p. 519.

⁵ William Farr, "Journal of the Statistical Society," Vol. IX, 1846, p. 163.

⁶ Quoted by Sir Theodore Morrison, "The Economic Transition in India," 1911.

We know truly that the present dearth has reduced so many people to poverty that there are estimated to be 3000 in the town and the suburbs. All the streets echo with their pitiful cries; their lamentations pierce our walls and their sufferings our hearts in pity thereat.

The poor in the fields seem like corpses dug up from their graves; the carrion upon which wolves feed is now the meat of Christians; for where they light upon dead horses, donkeys, or other beasts, they glut themselves with this putrid flesh which more often makes them die than live.

A miserable man, three of whose children asked him for bread with tears in their eyes, killed them all three and afterward killed himself. The judges ordered his body to be dragged on a hurdle.

In brief, wretchedness and dearth are become so universal that we are assured that in the neighboring country half the peasants are reduced to eating grass, and that there are few roads which are not fringed with dead bodies.

An official letter written to Colbert in 1675 by the Duc de Lesdiguières, governor of the province of Dauphiné, declares "that the greater part of the peasants of the province have lived during the winter only upon bread made from acorns and roots, and that at the present time they may be seen eating the grass of the fields and the bark of the trees."

Great local inequalities in food prices disappeared in the reign of Louis XVI (1774-92). For the first time, it is said, thanks to the removal of internal transit taxes and the reduction of the cost and risks of transport, there was not more than 100 per cent difference in the price of food between any two places in France.

WHAT HAS MUZZLED FAMINE? Various developments save us to-day from the jaws of the gaunt wolf.

1. *Improved means of transportation.* How much a slim harvest will cause a dearth of food depends on the

breadth of the area from which you can draw supplies. When ten leagues is the limit, one season in twenty may be so bad that the local price of food will be doubled. When rail gives you a radius of five hundred miles, this may occur but once in a century. When it is possible to tap overseas sources, none may ever starve save from poverty. Hence, every extension of interregional or international trade puts famine further off. Never again should people starve in one province while in a neighboring province crops rot in the fields from lack of demand.

If one follows down through the nineteenth century the spread of grain prices between different parts of France or Germany, one finds this spread diminishing as the weaving of the net of roads, canals, and railways permitted the deficiency of a local harvest to be met from the surpluses of more favored districts. So also if one follows the spread of grain prices between neighboring countries, though here trade policy complicates. Decade by decade this spread lessens, proving that for the staple foods more and more all countries are but segments of the world market.

2. *The perfecting of the art of food preservation.* The swinging of food surpluses across wide gulfs of space or time until they arrive at the place or day of need owes much to the art of holding at bay the microbes of putrefaction. The processes of drying, canning, and chilling have been so perfected that there is now hardly a time limit to the keeping, and therewith to the shipping, of foods.

3. *Diversified production.* Thanks to international trade a many-sided economic life insures a people against famine. In a country purely agricultural a bad drought may cut the national income in two. But in case there are forests, mines, oil wells, and factories with products to export, while some own shipping and investments abroad,

there will be means for buying and bringing in foreign food.

4. *Stabilization of agriculture through water control.* In India, the classic land of famine, the cultivator has to gamble against an uncertain rainfall. Famines in India are not always in years of little rain. Often they occur in years of a very heavy rainfall, which, however, comes too early or too late or too much at a time, and is not stored. Now great engineering works which impound flood-waters in high valleys to release them when distant river plains are athirst afford agriculture protection against deadly droughts. Where, as in the Punjab, five rivers are joined by canals and led upon the desert, the cultivator defies the brazen sky, for his moisture is assured by the precipitation of the whole Himalayan uplift. Already an eighth of the cropped area of India is irrigated, and as the practice of water conservation spreads to other fertile regions with capricious rainfall, the tragedy of burnt dying crops will become rarer.

5. *A high standard of living.* A popular standard of living which includes much besides necessities is a bulwark against famine. The average Indian agriculturist lays out on food 94 per cent of his total expenditure; the day laborer, 95.4 per cent; the carpenter 83.5 per cent; the blacksmith, 79 per cent.⁷ In the harsher climate of North China Dittmer found that the modal family among 629 rural families spent 67 per cent of its outlay on food. On the other hand, in Western Europe working-class groups will lay out on food from 44 to 50 per cent of what they spend; in the United States, from 35 to 45 per cent. A recent investigation of the budgets of 12,096 families of wage-earners by the U. S. Department of Labor showed

⁷ Radhakamal Mukerjee, "The Foundations of Indian Economics," 1916, p. 57.

an average of 38 per cent laid out on food. American farm families of the North put 37 to 39 per cent into food; those of the South, 44 to 48 per cent. So in a pinch the Occidental worker's family could *double*, or even *treble*, its outlay on food; while the Indian worker's family could not add more than a small fraction.

Moreover, in both quantity and quality, the Occidental's diet stands far higher above bare subsistence than the Oriental's. By eating less and coarser food an employed American laborer might be able without assistance to keep his family alive even if the price of food rose to *four* times the normal. On the other hand, the employed Indian day laborer, who lays out nineteen twentieths of his wages in providing a slender diet of the simplest food, would starve in case the price of food rose above normal by as much as a quarter.

Otherwise put, in a time of dearth Oriental wage-earners perhaps cannot tolerate a rise in prices sufficient to draw in food from sources more than a hundred miles distant; whereas American wage-earners might be able to meet the cost of bringing in their food from the ends of the earth.

6. *Capital and credit available to the many.* The possession of resources available to be pledged for the purchase of food is another safeguard against famine. Suppose in one of our farming States no rain fell for a year. The local banks could inject supplies of credit limited only by the mortgageable wealth of the farmers. With the aid of coöperative credit associations the farmers might draw in still more purchasing power on the basis of their personal credit. Conversely, the early appearance of distress in a drought-stricken Oriental district is due "partly to the way in which the soil is parcelled out among petty farmers, who have no capital

and no organized system of credit, and whose millions of field laborers are at once thrown out of work when the crops fail.”⁸

7. *The scientific combating of famine.* Even pullulating British India, thanks to Western humanitarian ideas and administrative skill, now eludes the bony fingers of famine. In former times every local crop failure meant starvation to many. But in recent decades officials keep a watchful eye on the state of the crops, the course of food prices, the returns of births and deaths. Programs of relief work are made ready and carefully kept up to date; and all necessary arrangements are made for commencing relief operations the moment they are needed.

“Famine” connotes at the present time something very different from its implication in the old day. Not so very long ago, a famine meant absolute inadequacy of food, generally arising from some natural catastrophe. It implies now nothing more than the inability of the section of the population to pay the high prices which food grains occasionally attain. Few things were more striking during the distress characteristic of 1921 than the fact that even the depressed classes of the population, who within living memory were accustomed in times of shortage to subsist upon seeds and roots, were able to purchase corn when the price was 4 seers to the rupee.⁹

HOW FAMINE MIGHT REAPPEAR. Will famine stay muzzled? Not if people multiply until the standard of living falls so low that in normal times 60 per cent or more of the family budget goes for food. Not if farm tenancy grows, tillage is more and more divorced from ownership, and the typical cultivator comes to possess little which in a bad year he can pledge for food to carry him over until he makes the next crop. Despite cheap transportation and

⁸ “General Report of the Indian Census for 1911,” p. 57.

⁹ “India in 1923-24,” p. 189.

the other safeguards, the caprice of the seasons will again make myriads hunger in case mass poverty is allowed to develop. In India "millions have starved beside the railway, which could have brought them food if they had had goods or money with which to buy it." Now that for the first time famine no longer figures among the great destroyers of life, *human beings must not breed as if they still were liable to be decimated periodically by hunger.* Otherwise "starving times" will recur even in this age of steam and steel.

CHAPTER IV

THE CONQUEST OF DISEASE

TO-DAY the doctors are triumphantly riding down the broken ranks of disease only because of a series of wonderful discoveries in the field of medicine. Dr. Jenner turned a page of history when in 1796 he inoculated a boy with the virus of cowpox and found that the lad was immune when exposed to smallpox. Although the good doctor did not understand what really had taken place, vaccination was born of his experiment.

In the sixties of the last century an English surgeon, Joseph Lister, aghast because so many of his operations terminated in death from blood-poisoning or gangrene, noticed that there was a marked reduction in the proportion of the cases going wrong if extreme cleanliness had been observed during the operation and if the wound had been protected from exposure to the air. So he began to use carbolic acid to form a crust over the wound and keep out the air. Thus he became the father of antiseptic surgery.

PROOF OF THE GERM THEORY OF DISEASE. A little later Louis Pasteur, a French physician, was called to aid the wine and beer producers of his nation by discovering why so much of their product "went bad." His investigations showed that if beer and wine were hermetically sealed fermentation would not take place. He went on to prove that foods could be kept fresh and milk could be kept sweet for an indefinite period if only the minute forms of life float-

ing about in the air were excluded. Then he startled the world with the announcement that he had found the cause of anthrax in certain minute rod-shaped bodies, "bacteria." This discovery put the "germ theory" of disease on its feet. Pasteur went on to develop an antitoxin for anthrax in 1881 and another for hydrophobia in 1885. At a glance Lister caught the significance of Pasteur's discoveries. So this was why cleanliness prevented blood-poisoning! By excluding these viewless seeds of disease Lister had stumbled upon scientific antisepsis.

Now came a glorious burst of discoveries. The finest minds—Koch, Laveran, Kitasato, Yersin, Theobald Smith, Manson—trained their microscopes upon disease products and exposed a whole den of deadly serpents: the gonococcus and the organism of leprosy in 1879; the pneumococcus, the staphylococcus, the typhoid bacillus, the malarial plasmodium in 1880; the tubercle bacillus and the streptococcus in 1882; the "comma bacillus" of cholera and the diphtheria bacillus in 1883; the tetanus bacillus in 1884; the meningococcus in 1887; the plague bacillus in 1894; the dysentery bacillus in 1897; the germ of syphilis in 1905; the bacillus of whooping-cough in 1906; the cause of yellow fever in 1919.

The horizon opened up by these microscopists is enough to give one the shivers. No wonder the disease-producing bacteria are prevalent. Their rate of reproduction is hardly conceivable. If one bacterium could multiply for twenty-four hours, each new bacterium giving rise likewise to two others, you would have a crop of seventeen million bacteria. Continue this for five days, and the resulting mass of bacteria would fill the world's oceans to the depth of a mile! Fortunately only a relatively small number of such forms are really harmful to mankind.

There is still much doubt as to whether or not a given

disease is caused by a germ and, if so, whether the particular form is a vegetable organism (bacterium) or an animal organism (protozoön). Among the diseases generally considered to be bacterial are: gonorrhea, cholera, typhoid fever, pneumonia, meningitis, influenza, yellow fever, diphtheria, tuberculosis, and leprosy. Among those usually attributed to animal parasites are: malaria, amœbic dysentery, syphilis, and sleeping-sickness. In the group of diseases, the cause of which is still under discussion but for which some parasitic form is usually blamed, are hydrophobia, scarlet fever, smallpox, typhus, measles, mumps, infantile paralysis, and whooping-cough.

THE MODERN STRUGGLE AGAINST DISEASE. The triumph of the germ theory dug the grave of the filth theory of disease. Through three quarters of the nineteenth century the best sanitary experts charged malaria to decaying vegetation in swamps, cholera to the eating of decayed fruit and vegetables, diphtheria to some defect in drains which allowed sewer-gas to get into the house. In our South the notion that yellow fever is a filth disease led in some communities to "clean-up" policies nothing less than frantic. One of our first steps when we came to administer Cuba in 1898 was to send our crack street-cleaning expert to "clean up" Havana and thus make it salubrious. The very real victories of this type of sanitation have been won over diseases of intestinal transmission—cholera, dysentery, typhoid, hook-worm; insect-borne diseases—yellow fever, malaria, typhus, the plague; as well as such diseases as blood-poisoning and tuberculosis. These afflictions really *can* be checked by the protection of water, milk, and food supplies, the liberal use of sunlight, fresh air, soap-suds, and whitewash, and the destruction of vermin, insect-breeding places, and rat harbors. But there are other communicable diseases, such as diphtheria and

scarlet fever—not transmitted by filth or vermin—which can be foiled only by *isolation* or *immunization*.

BATTLING THE INVISIBLE. So the struggle against diseases turned into warfare upon the bacteria which cause them. For this attack perhaps the best weapon is *general sanitation and personal hygiene*. Asiatic cholera, typhus, typhoid, and tuberculosis are losing power over the more cleanly peoples. The cleanliness program includes the extermination of vermin; for the flea, the louse, the bedbug, the house-fly, the mosquito, and the tick have been proven to be carriers of deadly germs. In fact more than two hundred diseases have been shown to be carried by insects.

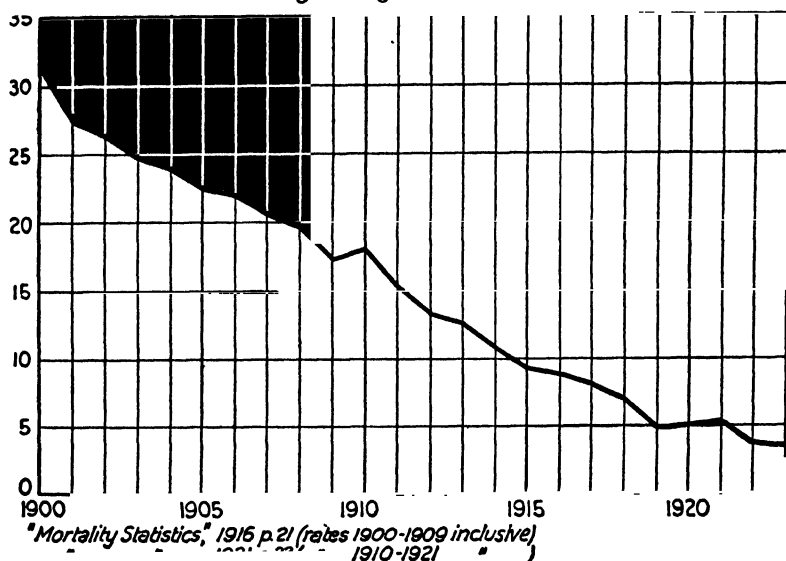
Another measure preventive and often curative is *vaccination* or *inoculation*. This takes usually the form of injecting an attenuated culture of virus into the individual with the object of subjecting him to a mild attack of the disease, thus causing immunity to later exposures. When an individual is attacked by specific disease bacteria, they create a substance known as a "toxin." It is this that overcomes the body cells. The healthy body, however, reacts to the presence of these toxins by secreting a neutralizing substance, an "antitoxin." The mild attack of the disease brought about by vaccination or inoculation, then, develops antibodies against that specific disease germ, hence creating a term of immunity. In some cases the live bacteria are used, though usually the dead germs are taken, since it is really the toxin which it is desired to introduce into the healthy body.

A third measure is *the use of serums*. In this case it is not the toxin which is introduced, but the antitoxin. The antibodies already formed are taken from an immunized individual or animal and injected into the blood-stream of the person to be treated.

PROGRESS ON PARTICULAR "FRONTS." Each of these great scourges of humanity is being systematically attacked by men of science. A brief account of the tide of battle on some of these "fronts" will register the progress in the overcoming of disease.

Typhoid fever. This disease, formerly one of the most dreaded, is now in rout. Known since 1880 to be bacterial,

FIG. 1.— DEATH-RATE PER 100,000 POPULATION FROM TYPHOID FEVER
In the Original Registration States, 1900-1923

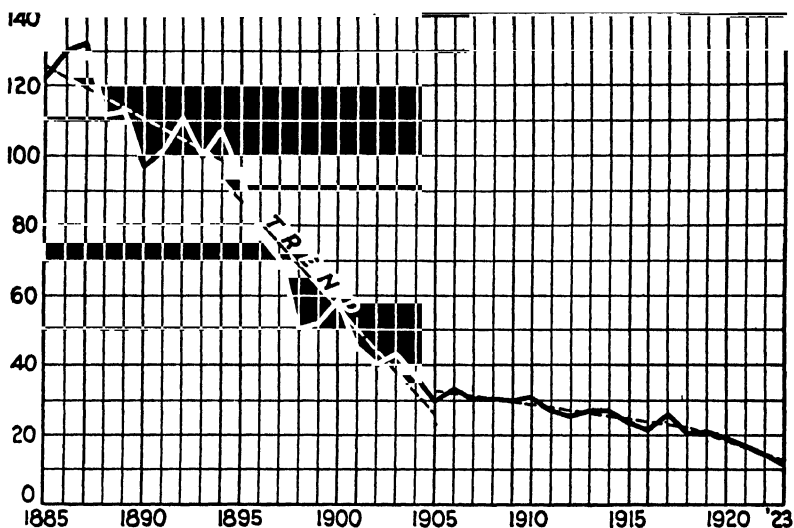


it has been attacked by two methods. One is *preventive hygiene*, for there is little typhoid where foods and drinks are uncontaminated. Thus the curve of the decline of typhoid fever in the Registration Area¹ of the United States, 1900-13, is nearly the obverse of the curve of the increase in the population provided with a filtered or chlorinated water-supply.

¹ This area has gradually expanded until for births it includes 76 per cent of the American people and for deaths 88 per cent.

The other attack is the use of *antityphoid inoculation*. Thus on the late Western Front, thanks to antityphoid inoculation, there was less typhoid among the British army of one and a quarter million troops than among the 208,000 British troops engaged in the Boer War. Among the American troops in the Spanish-American War typhoid was over two hundred times as prevalent as in the recent

FIG. 2 - DEATH-RATES PER 100,000 FOR DIPHTERIA
IN TWENTY-THREE AMERICAN CITIES,
1885-1923

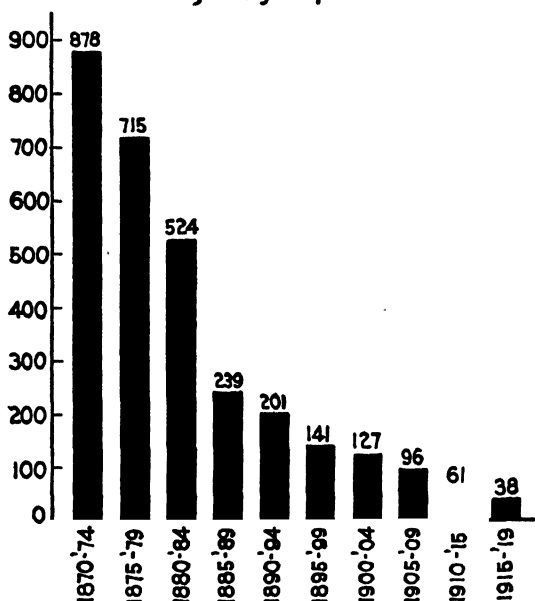


Courtesy of the Statistical Department of the Metropolitan Life Insurance Company

American Expeditionary Force overseas, made up of inoculated men. Inoculation is now practised with success on the civilian population. In view of the fact that, while in 1900 it stood eighth in the list of killers in the U. S. Registration Area with a toll of 31.3 per hundred thousand population, in 1923 it ranked nineteenth with only 6.8 deaths per hundred thousand population, it seems safe to predict that we are about done with typhoid.

Diphtheria. The germ of diphtheria was isolated in 1883, and in 1895 began to come into general use the antitoxin treatment originated by Behring. As a result there has been a remarkable fall in the diphtheria death-rate. In Chicago during the eight years previous to the use

FIG. 3
ANNUAL MORTALITY FROM SCARLET FEVER PER
MILLION PERSONS IN ENGLAND AND WALES.
By five-year periods

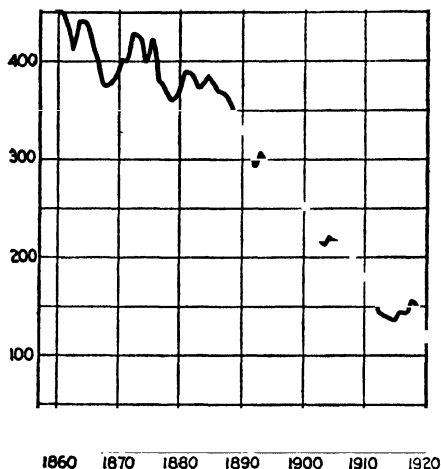


of antitoxin the annual death-rate was 124.5 per hundred thousand population. During the first eight years after, the annual rate was 45.5. In 1900, this disease had a death-rate of 43.3 per hundred thousand; in our Registration Area in 1925 the rate was 7.8 and rapidly dropping. It is believed that the early and universal inoculation of infants with toxin antitoxin will utterly annihilate this scourge of childhood.

Scarlet fever. In 1924 an antitoxin for scarlet fever was discovered which invariably arrests the disease in the first of its three stages. Even without it our death-rate from scarlet fever has been cut to a fourth in the last quarter-century.

Tuberculosis. The presence of tubercle bacilli in ancient Egyptian mummies attests the antiquity of this killer. It

FIG. 4 - MORTALITY FROM TUBERCULOSIS
PER 100,000 PERSONS IN MASSACHUSETTS
1857-1920



is often mentioned in Greek and Roman writings, being apparently one of the most common diseases. The beginning of the conquest of tuberculosis dates from the isolation of the bacillus by Koch in 1882. Although no successful serum has been found, the distribution of the disease is understood, its presence may be tested, and it is not difficult to cope with in its early stages. The most successful attack has been along the lines of sanitation, fresh air, sunshine, wholesome food, and rest. Some authorities give the American death-rate from tuberculosis in the decade

before Koch's discoveries as 318 per hundred thousand. In 1900 it was 202 for the United States Registration Area, while in 1925 it was 86.6. In Scotland the rate has fallen from 404 in 1882 to 124 in 1924. From being our arch-killer in 1900 it has sunk to fifth place, while in a decade the average age of its victims has been pushed upward six years. In sixteen years the American pulmonary tuberculosis mortality rate for white persons has been cut to a third, and a hundred thousand fewer persons die each year in the United States from tuberculosis than would have died if we were still subject to the death-rate of two decades ago.

Observes Dr. William Osler in his Silliman lectures for 1921: ²

A generation has changed completely our outlook on one of the most terrible scourges of the race. It is simply appalling to think of the ravages of this disease in civilized communities. Before the discovery by Robert Koch of the bacillus, we were helpless and hopeless; in an Oriental fatalism we accepted with folded hands a state of affairs which use and wont had made bearable. Today, look at the contrast! We are both helpful and hopeful. Knowing the cause of the disease, knowing how it is distributed, better able to recognize the early symptoms, better able to cure a very considerable portion of all early cases, we have gradually organized an enthusiastic campaign which is certain to lead to victory. . . . At the lowest estimate it will take several generations before tuberculosis is placed at last, with leprosy and typhus, among the vanquished diseases.

Since the decline in mortality from tuberculosis has been more general than the campaign against it, some suspect that the civilized peoples are in process of acquiring a constitutional immunity to it akin to the comparative immunity they have acquired to measles, for when first

² "The Evolution of Modern Medicine," 1922, p. 232.

it strikes a nature people measles is a man's-size demon.

Malaria. Snuffer-out of perhaps two million human lives a year, malaria is now rated the arch-enemy of man. Sir Ronald Ross, the English surgeon awarded the Nobel Prize for his discovery of the rôle of the mosquito in malaria dissemination, has estimated that one third of the population throughout the tropics suffer from this disease every year and that it is the cause of about one third of all the admissions to the hospitals in the tropics.

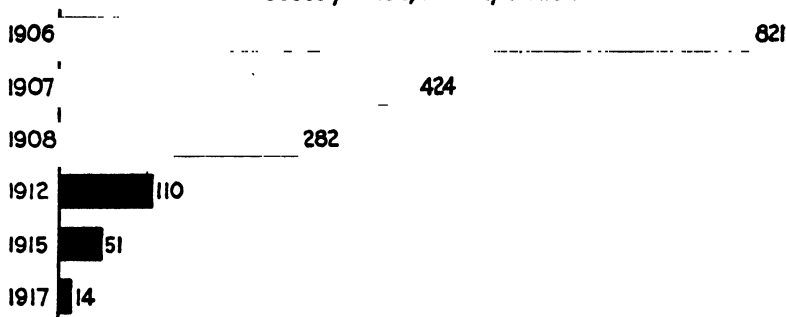
Malaria makes some parts of the world not only a graveyard for the white man but even uninhabitable. In the Terai, a wet forested belt along the foot of the Himalayas, I am informed by the public health commissioner of India, malarial mosquitoes are so bad that, although a forest folk manages to survive, the Indian settlers brought in to cultivate the land lose practically all their children!

Malaria is now known to be produced by an animal parasite conveyed only by the bite of an infected female *Anopheles* mosquito. The story of the struggle to determine the cause of this disease is thrilling. We find physicians importing malarial mosquitoes from Rome into England, there to let the insects bite them—in this way, to bring about the disease hundreds of miles from the infected area, proved the mosquito to be the carrier. We find other physicians sojourning with impunity in malarial regions when protected by mosquito-netting, thus showing that the disease can be spread only through the mosquito.

It has been estimated that the railroad built across the isthmus of Panama in 1849-55 cost the life of a man for every tie laid. The attempt of the French led by de Lesseps in 1881 to dig a canal across the isthmus ended in failure owing to the ravages of tropical disease. Yellow

fever, malaria, dysentery, and typhus carried off in nine years nearly twenty thousand employees and laborers. The campaigns on the part of the American government to rid Havana and the Panama region of malaria and yellow fever were a brilliant success after the first two years. Here is the graph of the United States government's conquest of malaria in the Canal Zone. In the last six years there have been only two deaths from malaria among its employees there.

FIG. 5- THE DEFEAT OF MALARIA IN THE CANAL ZONE
Cases per 100,000 Population

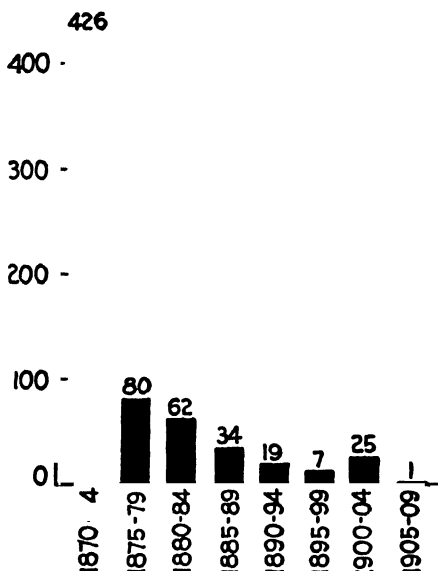


At Ismailia, a systematic attack upon the breeding-places of *Anopheles* together with the use of quinine reduced malaria from 1551 cases in 1902 to 37 cases in 1905. In certain towns of the Federated Malay States similar operations reduced the cases of malaria from 510 in 1900 to 23 in 1905. In these states the malaria death-rate of 11 per thousand in 1908 had been pared by 1918 to 3 per thousand. Between 1902 and 1907 the deaths from malaria in the Registration Area of the United States were cut in two.

Smallpox. It is supposed that over half the people of Europe in 1775 had pock-marked faces. In England "men would not marry unless or until the lady had had the

smallpox. Servants were advertised for who had had it . . . ladies who had not had it or were not marked were at once regarded as beauties.”⁸ In the century before Jenner London alone lost nearly two hundred thousand from this one disease. With the spread of the practice of vaccination a great falling off occurred in the smallpox rate. Germany, which has long required vaccination, neg-

FIG.6- ANNUAL MORTALITY FROM
SMALL POX PER MILLION PER-
SONS IN ENGLAND AND WALES
By Five-Year Periods



lected it during the war but resumed it immediately afterward. Her post-war experience furnishes perfect proof of the protective value of universal vaccination. The number of cases of smallpox in Germany, which was 5012 in 1919,

⁸ G. T. Griffith, "Population Problems of the Age of Malthus," 1926, p. 248.

fell to 2042 in 1920, to 688 in 1921, to 215 in 1922, and to 17 in 1923.

To-day serious outbreaks of smallpox occur only where there is a large element of the unvaccinated or of those whose protection has been weakened by the lapse of time. That in the United States in the six years 1919-24 there have been reported 275,000 cases of smallpox, the highest total in the world, shows the inevitable outcome of a weak-minded yielding to the clamor of fools.

Leprosy. This disease was known in Egypt as early as 2400 B. C. It existed in India and China at least a thousand years before our era. The Persian wars appear to have introduced leprosy into Greece, and thence it was diffused throughout Italy. In the course of the Dark Ages it crept over the greater part of Europe, causing so much dread that the segregation of lepers was begun. In the degree that the victims were isolated, the disease abated. It has now nearly died out of Europe, although traces of it remain in Norway and parts of Russia. In Asia, South Africa, the Philippines, and the Hawaiian Islands leprosy still makes terrible ravages. A specific seems to have been found, however, in chaulmugra oil, and the success of the policy of isolating the patients in leper homes makes it plain that leprosy can be stamped out everywhere.

THE PROSPECT. We are in the midst of a gigantic silent war on our invisible foes which is going very well in many quarters, but not in all. No knock-out blow has yet been delivered against infantile paralysis, cancer, organic heart disease, pneumonia, Bright's disease, or cerebral hemorrhage. As other diseases are damped, the ravages of these uncurbed diseases stand out in high relief. Since all must quit life, the more exits we block, the greater the number who must pass out through the exits still open.

This is not to deny that susceptibility to heart disease and cancer is increasing.

The medical future is more hopeful than it has ever been in the history of mankind. The patient work of thousands of keen-eyed clinicians and painstaking laboratory men is gradually exposing disease to the light, and some bid us hope for a day when germ diseases will be wholly conquered. The little islands of fruitful endeavor which lifted above the waste a generation ago have been extended and multiplied until they give signs of becoming a huge solid continent. Never was there a brighter prospect of a relatively diseaseless humanity free to lead long, healthy, and joyous lives.

CHAPTER V

THE THROTTLING OF PESTILENCE

No life-saving exploit matches our success in throttling those pestilences which, since men took to cities, trade, and travel, have swept through populations like a typhoon. Already most of these furies are hamstrung, and the prospect is bright that within a lifetime all the chief mass-slayers will be laid low. Behold how Science has dulled the scythes of these grim reapers.

Asiatic cholera. This disease is endemic in the delta of the Ganges, from which, following paths of human intercourse, it has from time to time sped to the ends of the earth. During the sixteenth, seventeenth and eighteenth centuries it blazed out at various times in India, but it did not invade Europe till 1817. Since then wave after wave has swept the Western world. The French epidemic of 1853-54 cost nearly 150,000 lives, while during the fourth pandemic (1864-75) Prussia alone lost 115,000. In the fifth pandemic European Russia lost about 800,000. Our growing mastery of the disease may be read in the figures of deaths from cholera in New York City during successive decades since 1830. They are: 4486, 5095, 3025, 1304, 16, 0, 9, 0.

Since Koch's discovery of the bacillus we fight cholera by checking the diffusion of the bacillus rather than by attacking the disease itself. The prairie-fire spread of cholera, once attributed to wind-borne infection, is now seen to be always along the lines of human movement. The

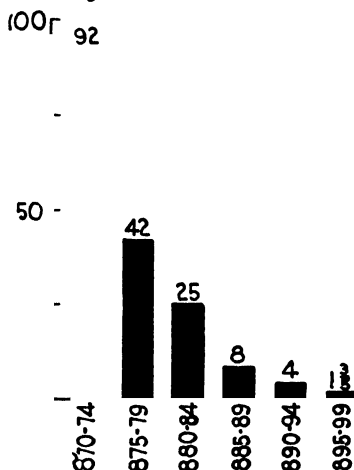
vast pilgrim throngings at Hardwar and Allahabad in India used to be regularly followed by cholera outbreaks. The chief means of prevention is strict cleanliness along with the extermination of flies. The experience of Hamburg as compared with that of near-by towns during the flare-up of 1892 showed clearly the rôle of contaminated water as a cholera spreader. Although occasionally nowadays a case appears in an Occidental seaport, prompt isolation of the patient prevents further trouble. Even out in the cholera-stricken Orient, one who takes great sanitary precautions is generally able to escape infection. We are not justified, however, in assuming that Asiatic cholera is soon to be wiped out; for its endemic area has gradually expanded and is likely to continue to expand for many years. Up to the last century Asiatic cholera was confined to lower Bengal. "It is now endemic over the greater part of British India. It appears annually in Farther India, Siam, Cochin-China, China, and Japan. It appears frequently in Persia, Asia Minor, Turkey, the Balkan States, Austria, and Russia."

Typhus. This disease preys upon people living crowded together in uncleanness, and hence its aliases, "jail-fever," "ship-fever," "camp-fever." More than a million cases of typhus occurred in England in 1846-48, and nearly a third as many in Ireland. During the Thirty Years' War more combatants died from typhus than from weapons. It was the terror of the Napoleonic campaigns and the scourge of the armies in the Crimea. During the World War more than a million cases occurred among the Allied troops, largely on the Eastern fronts.

In 1908 it was shown by certain French physicians in Tunis that the germ of typhus is conveyed by vermin. In 1910 Ricketts and Wilder, working in the slums of the City of Mexico, established that typhus is com-

municated by the body louse, and later the U. S. Public Health Service confirmed it. The brilliant success of American sanitarians in checking typhus in the Balkans, the Near East, Russia, and Siberia was due to their anti-louse tactics. Thanks to such measures the American Expeditionary Force was virtually free from typhus. In 1923 only two deaths from typhus were reported in the United States. The disease has practically

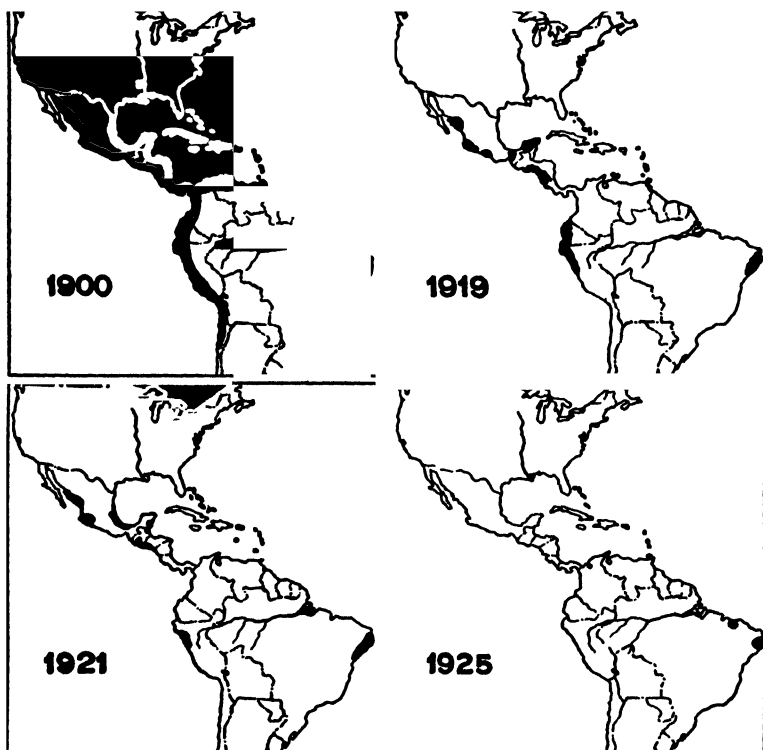
FIG.7- ANNUAL MORTALITY
FROM TYPHUS FEVER PER
MILLION PERSONS IN ENG-
LAND AND WALES.
By Five-Year Periods



disappeared from civilized countries in time of peace, and there is no reason why it should ever return. Owing to war, revolution, and foreign invasion, typhus gained such momentum in Soviet Russia that for a while Russia's death-rate exceeded her birth-rate. Dr. Semashko, commissioner of the public health service of Soviet Russia, quotes Lenin as saying, "The question hangs in the bal-

ance whether the louse will conquer socialism, or socialism the louse." In view of the low general death-rate of 12 per 1000 in Leningrad and 13.7 in Moscow, Dr.

FIG.8 - RESULTS OF A QUARTER CENTURY OF YELLOW FEVER CONTROL



From the Review of the Work of the Rockefeller Foundation for 1925

Semashko declares exultantly, "Socialism has now conquered the louse."

Yellow fever. A scourge of the tropical New World, introduced perhaps in slave ships from the West Coast of Africa, yellow fever has found a foothold in the United States about ninety times. In 1793 it slew a tenth of the

people in Philadelphia, while in 1853 it carried away 8000 in New Orleans. From 1900 to 1923 only 464 deaths from yellow fever were recorded in this country, of which 434 occurred during the 1905 epidemic in New Orleans. The lassoing of this monster dates from 1899, when the disease was discovered to be conveyed only by the bite of the female *Stegomyia* mosquito. The story of the extirpation of yellow fever in Cuba, Panama, Mexico, Central America, Venezuela, Ecuador, and Peru, resulting in its virtual expulsion from the Western Hemisphere, is the best known romance in the history of medicine. In 1825 only three cases from Northern Brazil were reported from all the Americas.

President Vincent of the Rockefeller Foundation thus sketches the outlook for this disease:

With the gradual disappearance of yellow fever from the Americas, West Africa becomes the last stronghold of this stubborn enemy. The fortress is formidable enough. An area as large as the United States east of the Mississippi, a tropical climate, the prevalence of many diseases, few and for the most part difficult means of travel, a population of thirty million natives—superstitious, secretive, and suspicious—present a challenge that turns sanitary and health work into a high adventure. The danger that the completion of trans-African railways may carry the fever to the East Coast whence it may make its way to India and the Far East revives the fear which the opening of the Panama Canal aroused over ten years ago.

The plague. This *Black Death* figures in the ancient Sanskrit and Egyptian writings and in the Bible. Forty-one epidemics of the plague are recorded as having occurred before the Christian era. During the first fifteen centuries of this era there are records of 109 epidemics. In 1348 the plague is said to have cut the population of Rome to 20,000, while in London at least 100,000 died of

it. In the words of Hecker, the historian of medieval epidemics,

Every country in Europe, and Italy perhaps more than any other, was visited during the Middle Ages by frightful plagues, which followed each other in such quick succession, that they gave the exhausted people scarcely any time for recovery. The Oriental bubonic plague ravaged Italy sixteen times between the years 1119 and 1340. Small-pox and measles were still more destructive in modern times, and recurred as frequently. St. Anthony's fire was the dread of town and country; and that disgusting disease, the leprosy, which, in consequence of the Crusades, spread its insinuating poison in all directions, snatched from the paternal hearth innumerable victims who, banished from human society, pined away in lonely huts, whither they were accompanied only by the pity of the benevolent and by their own despair. All these calamities, of which the moderns have scarcely retained any recollection, were heightened to an incredible degree by the Black Death, which spread devastation and misery.¹

After sifting the various accounts Hecker comes to the conclusion that about a quarter of the inhabitants of Europe perished from this visitation.

The plague thrives where the common people live in filth and squalor, and many Eastern countries have long been afflicted with it. In 1923 were reported 384,000 deaths from the plague, nine tenths of them in India. As yet not much has been done in the way of immunization or cure. Although there is a standardized serum, the growing defiance of the disease springs from the discovery that it is communicated by the bite of a flea which infests rats. Hence, extermination of the house rat and like vermin in infected centers is the key to plague suppression. With rat-poison, squirrel-guns, and concrete construction it is easy

¹ "Epidemics of the Middle Ages," 1844, p. 115.

to hold the pest at arm's length; so in the United States in 1923 there were no deaths from the plague.

SUNDRY VICTORIES. Other victories over devastating diseases are the discovery that the sole carrier of the germ of the terrible African sleeping-sickness is the *tsetse* fly, the tracing of the rôle of the sand-fly in the propagation of *kala-azar*, the linking of *beriberi* with the lack of a certain vitamine in the diet, the mastery of the *hook-worm*, the development of the sun treatment for *ricketts*, the finding of a specific for *syphilis*, the discovery of the great significance of the ductless glands, and the light on the physiological rôle of vitamines. The one great epidemic disease still uncurbed is *influenza*, which in India alone at its last visitation took upward of twelve million lives!

Fitly observes Dr. George E. Vincent, president of the Rockefeller Foundation, in his report for 1921:

The presence of small-pox is now a disgrace to any civilized community or country; cholera and plague have disappeared from the leading nations; typhoid fever has been enormously reduced; malaria and hookworm disease are giving ground; yellow fever is being narrowly restricted; typhus is practically unknown among cleanly people; the fear of diphtheria has been largely allayed. Such victories as these, together with advances in general sanitation, higher living standards, and more attention to individual health habits, have resulted in steadily falling death rates in all the more progressive countries.

THE WHITE PEOPLES EMERGE FROM TWO MILLENNIA OF HORRORS. The European races would seem to have just emerged from the most gruesome epoch of their entire history. For not always have they been harried by these grisly shapes. The universal scattering of virulent germs by migration, war, and trade has been in the main a phenomenon of the last twenty-four centuries. Five hundred years before Christ a city in Europe might be as

dirty as it pleased, but our worst diseases never came to pester it.

There was no malaria; that is an African disease brought to Europe by way of Egypt about the fourth century before Christ. Only lately have we realized that it was perhaps malaria that sapped the energy and undermined the civilization of the classic peoples.

There was no bubonic plague; it had not yet crept out of its lair in the East. It arrived 542 A.D. although it is possible that the mysterious pestilence which ravaged most of Europe between 164 A.D. and 188 was the plague.

There was no cholera; until the nineteenth century it limited its ravages to Asia and Egypt.

There was no smallpox, for this was a gift to the West from the Saracens; we first hear of the disease among the Arabs in the sixth century A.D.

There was no yellow fever; native of the West Coast of Africa the disease appears to have been carried by the slave-trade to America, whence it spread through the hot lands of the world.

There was no leprosy; this horror first appears in Europe soon after Xerxes' invasion.

There was no hook-worm; this bloodsucker, which is said to prey on half the inhabitants of some tropical and semi-tropical countries and which has been the chief blight on our Southern States, was introduced from Africa.

There was no syphilis, a disease so recent in our experience that some suppose it to have been brought from the New World by the sailors of Columbus. In any case the first important explosion of it in Europe is traceable to the mercenary army which Charles VIII of France led into Italy 1494.

In view of what it was free from, no wonder the Golden Age of Greece was characterized by a serenity of soul, a

freedom from superstition, an ardor for the truth, and a confidence in the unknown which were wanting in the pestilence-haunted late-Roman epoch and the Middle Ages.

SINCE DEATHS ARE FEWER, BIRTHS MUST BE FEWER. Three quarters of a century ago "chronic" diseases occasioned only one sixteenth of the deaths, the fifteen sixteenths being mostly from infections. Now chronic diseases constitute about one half of all. In view of such miraculous rescues and deliverances how can we justify ourselves in producing children at the old rate? Shall we keep on begetting infants just as if they still had to run the gantlet of the fell swordsmen of Azrael? To breed as of old now that the mortality among the enlightened peoples has been halved—or better—would result in a rapidity of growth such as has occurred hitherto only for brief periods in the first settling of the choicest regions by select immigrants. The calamitous effects which inevitably would follow such a headlong thickening of population in old and crowded societies should be plain even to simple men.

Let me venture a parable.

A passenger steamer is navigating a river—say, the Mississippi or the Volga—touching at every landing. At some wharves more leave than get on, at other wharves more embark than get off; but, on the whole, the number of passengers does not exceed the number which can be comfortably provided with berths and meals. But how if most of the passengers prolong their journey, tarry longer on the boat? How if at each landing only about half as many leave as get on? Why, soon either people must be thrust off the boat, or else fewer may be allowed to embark. Other alternative there is none. How childish are those who think to evade the spear-points of this logic by showing how many more might be carried if people

were allowed to sleep on the floor of the engine-room or on the roof of the pilot-house; by pointing out that saloon, music-room, and smoking-room might be filled with bunks! Such temporary makeshifts, although they will produce a general discomfort, cannot avert the certainty of having to adopt measures to limit the number who embark. "Pigging it" is no solution of the problem.

Now, the steamer is the individual country. The wharves are the years. To leave the boat is to die; to embark is to be born. To tarry longer on the boat is to live longer. For twice as many to get on the boat at a landing as get off is for births to be double the number of deaths. To fill floor of engine-room and roof of pilot-house with uncomfortable passengers is to fill deserts, barrens, swamps, and rocky uplands with poverty-stricken discouraged settlers. To give over saloon, music-room, and smoking-room for lodgings is to sacrifice natural hunting and fishing grounds and plow up rough pastures, shaggy hillsides, wild ravines, and other natural playgrounds in order to have more roods for growing beans and rice to sustain man's animal existence. And, no matter how far this may be carried, the clamor for more room will be just as fierce until births are brought to balance deaths.

CHAPTER VI

PUBLIC HEALTH PROMOTION

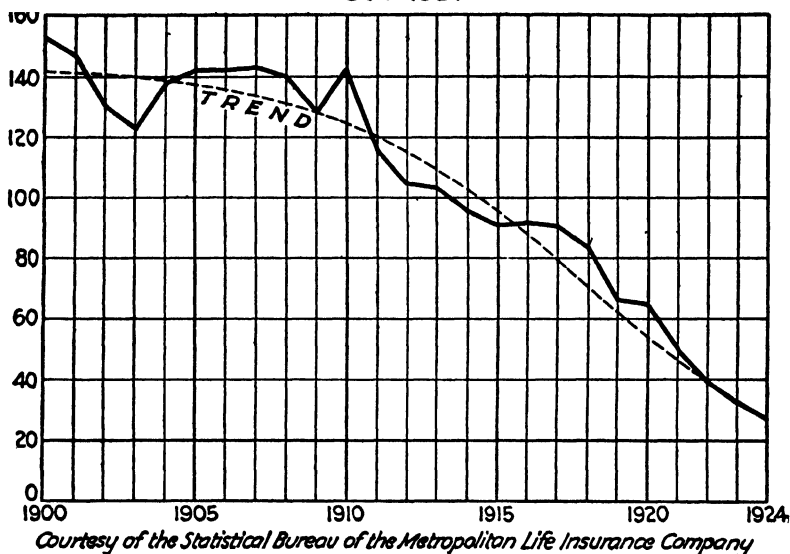
PHYSICIANS, clinics, and hospitals alone cannot make the public healthy. To realize fully on our new knowledge of disease we must work for *prevention* of sickness as well as for *cure*, aim at the *maximizing of health* as well as the *avoidance of disease*. It is not enough that the sick be treated skilfully; the well must be stirred to battle for the betterment of their own health. Hence, far-reaching public policies and new community institutions are called for if humanity is to reap the utmost from the discoveries pouring from the research laboratories. It is a sad fact that hardly any of the great discoveries of preventive medicine, save only the prevention of yellow fever, have come near to being fully applied anywhere.¹

The public health department. A department of government—directed by an expert, provided with resources, and armed with laws for the enforcement of basic health measures—has been found to be a necessity in keeping disease at bay. The well settled functions of a municipal health department include: the control of nuisances, the inspection of dwellings and schools, the supervision of food supplies, the control of communicable diseases, the maintenance of public health laboratories, and the registration of vital statistics. In the larger health departments will be found bureaus concerned with tuberculosis, with

¹ In this chapter I draw upon American experience simply because it is more accessible to me. The splendid work done in certain other countries would serve equally well to make my point.

infant and child hygiene, with the control of venereal diseases. The state health department wrestles with such state-wide problems as the curbing of epidemics, the protection of public water-supplies, the disposal of municipal and industrial wastes, the sanitary inspection of factories,

**FIG. 9- DEATH-RATES PER 100,000 FOR DIARRHEA AND ENTERITIS IN TWENTY-THREE AMERICAN CITIES
1900-1924**



and the safeguarding of the purity of foods and drugs. Year by year these departments call for more money and more authority—and get them. Such undreamt-of victories have been won in fighting disease that few believe the limit of wise public effort has yet been reached.

The county health department. In the city conditions are so artificial and carriers of communicable diseases so many that the policy of government protection was accepted early. In our open country, on the other hand, the solemn make-believe has ruled that the farm family—with

the aid of the country doctor—is competent to take care of its health. So yet only a seventh of the rural population of the United States enjoys a local health service under the direction of a full-time health officer. No wonder that *as a place in which to be well and strong the large city is actually superior to the country-side.*

The findings of the surveys made of the dwellers along the byways and back among the hills give sometimes a painful shock. Examination of half a million school-children has shown that physical defects occur more frequently in rural pupils than in urban. Inspection of nearly 8000 children in 270 country schools in one of the more rural counties in the State of New York disclosed that only one in nine could be reported free from physical defects. The rest of them had 14,372 things wrong with their teeth, tonsils, eyes, ears, or weight. In 1924 a physical examination of 3478 entering men students in one of the largest universities of the Middle West revealed that the soundest come from the large cities, while the greatest number of physical defects and the largest number of multiple defects in individuals occur among the students from villages.

The first county health department under the direction of a whole-time health officer was organized in 1911 in North Carolina. Now there are 300 counties so equipped, but there are 2850 counties in the United States rural or chiefly rural! The record of the health department of a certain Alabama county in its first five years shows how a slender money investment can be made to yield a fat dividend in public health. During its life the county has not had an epidemic (except influenza); this is attributed to improved sanitary conditions, prompt reporting by physicians, and proper measures of control, both in general and of the patient. The department's work includes

sanitation, safeguarding of milk and meat supplies, malaria control, a county laboratory for all sorts of disease, child hygiene, and school health work (7546 children examined), hygiene of maternity and infancy, a clinic for venereal diseases, a program of health education, and such miscellaneous bits as 282 examinations for life extension, 327 physical examinations for marriage, 276 children examined for work certificates, 1581 complete antityphoid inoculations, and 942 smallpox vaccinations. All this, for a county which contains 52,535 souls and covers 811 square miles, cost a trifle more than nineteen thousand dollars!

The public clinic. In place of the old-fashioned charity dispensary with its hasty glance and a bottle of medicine for the "deserving poor," has grown up the public clinic, emphasizing health education and disease prevention and coöperating with hospitals and private physicians for thoroughgoing treatment. Developed out of infant welfare and tuberculosis campaigns it has been extended to meet such problems as venereal disease, heart disease, etc. In the city of New York alone in 1926 there were listed not less than 230 such clinics.

The health center. Within the last fifteen years the health center idea has been spreading widely in the United States. Whereas in 1917 about a dozen were in existence in the larger cities, now about a thousand such centers are functioning. There is good ground for expecting that the maintenance of permanent tax-supported health centers will presently become a matter of course among us as it is in England, which has already upwards of two thousand such centers.

The infant welfare station. In Great Britain it is proposed to have continuous health supervision of the child, beginning with the prenatal clinic. A continuous record is to be kept from the moment of birth through the period

of pre-school life, of grade schools, secondary schools, and, in fact, throughout all the years of childhood and of adolescence. In the United States, the Federal Children's Bureau is fostering the same plan. Rhode Island seems to be the first State which has definitely committed itself to such work, beginning with the registration of the birth and continuing throughout the school life of the child. It is planned to turn over a complete health record of the child to the school authorities when the child is entered at school.

Public health nursing. The visiting or public health nurse, whether in the employ of the community or of a philanthropic organization, goes out into the homes of the people to work for the improvement of their health and general welfare. In the twenty years 1900-20 the organizations engaged in public health nursing have increased in number from 58 to about 4000 and the number of nurses employed by them from 130 to above 11,000.

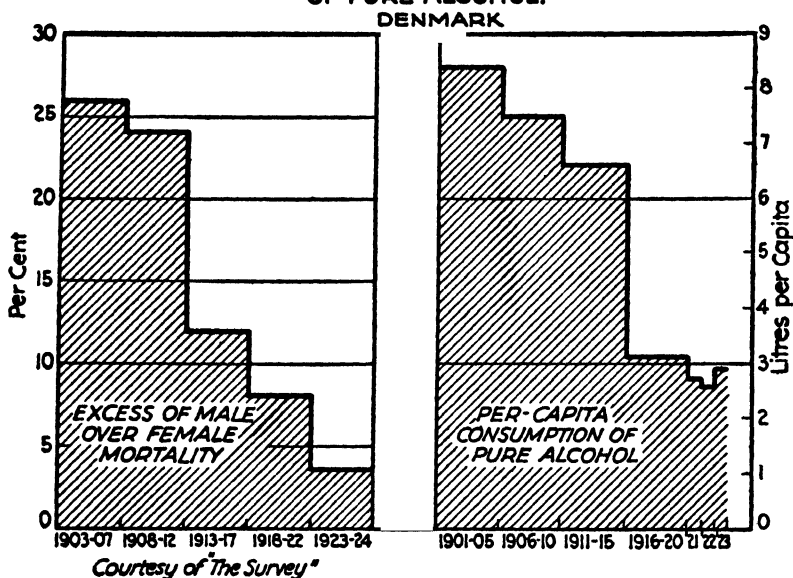
Compulsory immunization. We know well what compulsory vaccination can do in subduing smallpox. The experts now tell us that immunizing all school-children, beginning in the first year, by means of toxin antitoxin will put an end to diphtheria.

The enforcement of industrial hygiene. The shifting of industry from home to factory and the coming of the conditions of labor under the control of irresponsible, sometimes greedy and conscienceless, employers, constituted a grave menace to the safety and health of industrial workers. The evil bred its cure, however, in the new willingness to clothe a state industrial commission with power to make every place where persons are employed to labor, safe and healthful. The establishment of the legal principle that the innocent victim of an industrial accident or an industrial disease is entitled to compensation has had

a wonderful effect in stimulating employers to coöperate with the state authorities in accident prevention and industrial sanitation.

Anti-alcohol measures. Not least among the means of promoting public health are the measures to lessen the consumption of alcoholic beverages which are being taken

FIG.10- COMPARISON OF PERCENTAGE EXCESS OF MALE OVER FEMALE MORTALITY AND PER-CAPITA CONSUMPTION OF PURE ALCOHOL.



by the more socialized governments. In Denmark, for example, the excess of the mortality of men above that of women—so pronounced in all drinking peoples—has declined step by step with the curtailment of liquor consumption. Comparing 1923-24 with 1903-07 we find that for the age group 26-35 years the excess mortality of men has dropped from 39 per cent to nothing (see graph); for the group 36-45 years the men's excess of deaths has

dropped from 61 per cent to 16; for the age group 46-55 years the men's excess of deaths has dropped from 80 per cent to 11. Since nearly all men drank and few women, it seems fair to credit this equalization of the mortality of the sexes to the change in the drinking habits of the men. As a life-saver the anti-alcohol movement seems destined to rank with the greatest achievements of modern medicine.

Popular health education. In seven years of intensive effort to search out, care for, and prevent cases of tuberculosis in a Massachusetts city of seventeen thousand souls the deaths from tuberculosis were reduced 68 per cent, while in like neighboring towns, where no such extra effort was made, they fell only 32 per cent. In Cattaraugus County in New York State, selected for a "demonstration" by the Milbank Foundation, the general death-rate was reduced from 144 in 1923 to 126 in 1925, while the infant mortality rate was cut from 93 per thousand births to 65. Such achievements are practicable only with a public which has been extraordinarily stimulated and enlightened by intensive health propaganda. Daily news items, editorials, motion-pictures, lectures, educational courses in the schools, exhibits, parades, magazines, bulletins, circulars, posters, advertisements, photographs, cartoons, and a host of other things are used for this purpose.

In the city of Syracuse, New York, another "demonstration" subject, the Bureau of Health Education places information and news on health subjects before every resident. For physicians and health workers, weekly bulletins set forth the mortality and morbidity records of the city with pertinent current information. For molders of opinion, such as clergymen, educators, club workers, and

leaders in commercial and social lines, there is published an illustrated magazine dealing with the work of the agencies in the demonstration and of other organizations in the city engaged in health activities. Editorials in the daily papers discussing the more important phases of health work appear at frequent intervals, and are of special interest to this particular group. The results of special surveys on child health, industrial health, and venereal diseases, made by outside experts, have been published in pamphlet form and circulated among the technical people.

No serum does more for public health than printer's ink. To reach the general public, wide use is made of the newspapers. Articles are published to furnish health news, to give information and practical advice on health subjects, and to supply entertaining reading-material. A series of weekly stories is built about an imaginary character, Mrs. Wise, who brings to the attention of her good neighbor, Mrs. Smith, certain truths which the department of health wishes to broadcast. There is also a series of illustrated health stories for children.

Advertisements are inserted from time to time in the local newspapers calling attention to some special feature of health work. These papers also issue special health numbers.

There is a speakers' bureau, and its handbook listing available speakers on health topics is sent to all clubs, churches, factories, and schools in the city. For large mass-meetings, national and state authorities on health topics are brought to the city. With the aid of a motion-picture machine the bureau has been able to reach many foreign and native born American audiences to whom the unillustrated lecture does not appeal.

The children's health parade, now an annual spring event, illustrates all the health work being done for children in the city and serves to drive home to a vast street audience the value of health work in the schools. Health talks told at bedtime are broadcast over the radio. Health literature of a popular nature is supplied to the various factory reading-rooms. In factories and large business houses extensive use has been made of news bulletins and pictorial posters. The public library sets out in a conspicuous place in its reading-room its special collection of books on health.

As a feature of the diphtheria immunization campaign, a contest is conducted in the public schools. A silver trophy cup is awarded to the school having the lowest percentage of diphtheria cases and the highest percentage of pupils to take the toxin-antitoxin preventative treatment.

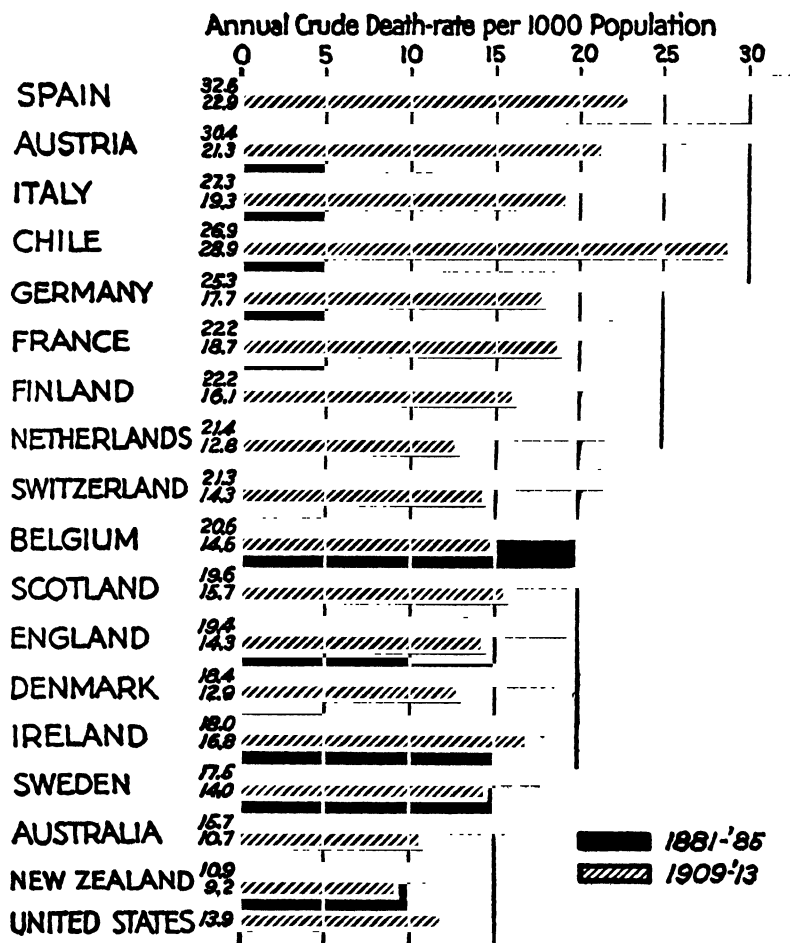
All this arsenal of ingenious devices is available to any community which sets out to enlist the public in the promotion of its own health.

HEALTH PROMOTION BY PUBLIC MEASURES LIKELY TO SPREAD. In view of the fabulous benefits realized in treated spots, who can doubt that public health measures will spread rapidly, now that the people control government and require it to promote the general welfare? The craving for health and long life is everywhere the same; so that everywhere the people will insist on public health promotion once they have come to have faith in it. Low mortality and long life are not destined to remain the privilege of a few peoples.

THE FIGHT FOR THE PUBLIC HEALTH BECOMES WORLD-WIDE. How the most various peoples and races are being spurred to take up the fight against disease appears from

the following résumé of the 1924 activities of the Rockefeller Foundation, which disposes of an annual income of nine million dollars:

**FIG. II- REDUCTIONS IN MORTALITY
IN TWENTY-EIGHT YEARS**



During the year 1924 the International Health Board, the China Medical Board, the Division of Medical Education, and the Division of Studies of the Foundation (1) underwrote to the amount of \$350,000 a plan for publishing an international abstract journal of the biological sciences; (2) began issuing bulletins which report progress in medical education in many countries; (3) helped to spread internationally knowledge about medical equipment and teaching methods through surveys by staff members, commissions of scientists, visiting professors, and traveling fellows; (4) hastened developments in the medical schools of the universities of Oxford, Cambridge, Edinburgh, Wales, Montreal, McGill, São Paulo, Hongkong, and Siam, and of the American University at Beirut; (5) maintained a modern medical school and teaching hospital in Peking; (6) aided three other medical schools and 17 hospitals in China; (7) helped to improve the teaching of physics, chemistry, and biology in two Chinese and nine foreign institutions in China and in the Government University in Siam; (8) had a part in the development of professional training for sanitarians and hygienists at Harvard University and in schools and institutes in London, Prague, Warsaw, and São Paulo; (9) gave funds for nursing education at Yale University and in schools and hospitals in Brazil, France, Yugoslavia, Poland, and the Philippines; (10) kept a mobile staff on guard against yellow fever in Mexico and Central America; (11) at the request of Brazil joined in an attack upon this disease from 11 centers along the northern coast; (12) helped to show the possibilities of malaria control in 13 American states and made malaria surveys or studies in Haiti, Porto Rico, Nicaragua, Brazil, Italy, Palestine, Queensland, and the Philippines; (13) either continued or began antihookworm work in conjunction with 32 states and countries in the West Indies, Central America and Mexico, South America, Europe, and the Far East; (14) contributed to the budget of rural health services in 207 counties in 24 American states and in New Brunswick, Brazil, France, and Czechoslovakia; (15) continued to aid the epidemiological intelligence service of the Health Section of the

League of Nations; (16) contributed to the League of Nations international study tours or interchanges for 99 health officers from 20 countries; (17) provided directly or indirectly fellowships for 864 individuals of 33 different nations; (18) lent staff members and made minor gifts to many governments and institutions for various kinds of counsel and aid; (19) assisted mental hygiene projects both in the United States and in Canada, demonstrations in dispensary development in New York City, the growth of antituberculosis work in France, and other undertakings in public health, medical education, and allied fields.

In his address "Hygiene as a World Force" ² Andrew Balfour of the London School of Hygiene and Tropical Medicine sketches what has been accomplished in certain parts of the world. In tropical Africa:

The East Coast from Uganda and Kenya in the north to the Rhodesias in the south has been the scene of active operations, and I would cite especially the campaign against syphilis in Uganda, that against yaws in Kenya, the war on the tsetse fly which is being waged in Tanganyika, and the determined attack on malaria and blackwater fever in Southern Rhodesia. On the West Coast, once the white man's grave, a great change has taken place and, though there is much yet to be accomplished, notably in the case of yellow fever, where valuable help is at present being rendered by American experts, life is now very different, both for the white man and the black, all the way from the Gambia to Southern Nigeria, than it was when that intrepid woman, Mary Kingsley, sent out her clarion call for action. There remains the Anglo-Egyptian Sudan, a greatly changed territory now to what it was in the days of the Mahdi and the Khalifa, when disease contended with the sword, the spear and the kurbash, to destroy life and render the natives wretched and hopeless.

France, ever to the fore in questions scientific, has greatly ameliorated conditions in the vast territories under the tri-

² "Science," November 12, 1926, Vol. LXIV, No. 1663, pp. 459-466.

color. Her work on malaria in northern Africa has been remarkable; in French Equatoria sleeping sickness has been relentlessly pursued; in Madagascar plague has been combated to good effect, while in French Indo-China much has been done in the way of safeguarding the public health. The Dutch, with a passion for cleanliness bred in their bones, have displayed qualities of great thoroughness and persistence in coping with difficult situations in Java and Sumatra. The way they have tackled plague is an example for other countries to follow, they have solved important problems relating to the manufacture of vaccine lymph in the tropics and, recognizing that hygiene pays and pays handsomely, they have spent great sums in improving the housing and living conditions of the coolies on their fine rubber and cinchona estates.

In Malaya Sir Malcolm Watson and others have accomplished a great work in reducing malaria and rendering estate labor healthy. Hong-Kong has changed from a pestiferous hole to a comparatively healthy seaport. Singapore and Colombo have carried out important sewage and water works and taken elaborate steps to guard themselves against imported infection. In Palestine a veritable revolution has been effected since the war, and there is not a single branch of the huge subject of public health which has not received some attention there at the hands of a small but devoted band of workers.

Thus far-sighted imperial policy, missionary enterprise, medical zeal, international philanthropy, commercial self-interest, the pride of native governments, and the fears of native peoples are speeding the flight of Hygeia to all but the most sequestered tribes of men. The curbing of infectious diseases among all the great sections of humanity is as certain as is the spread of the sewing-machine everywhere, the tapping of oil pools in the remotest regions, the setting up of airplane landing-fields in all parts of the earth.

REVOLUTIONARY RESULTS OF HEALTH PROMOTION. Is

fullness of days what it all comes to? By no means. *Population growth goes into high speed.* Without realizing it, the pathologists and sanitarians are greater revolutionaries than were Tiberius Gracchus, Danton, and Lenin. They are putting out of action certain brakes which have contributed to keep peoples from increasing their numbers so rapidly as to plunge them into a quagmire of miseries and difficulties. Their work is affecting the intensity of population pressure, the sharpness of the struggle for food, the outthrust of peoples and races, the volume of overseas flow, the attitude of governments toward immigrants, the quest for colonies to absorb the home surplus, the esteem of large families, the tradition that woman's proper place is by the cradle, the ancient chant, "Multiply and replenish the earth." To expect these things to remain as they have been is to think as a child. *They must change.*

CHAPTER VII

RESULTS OF THE WAR ON DISEASE

COULD our doctors throttle only the maladies of age, such as cancer, nephritis, Bright's disease, and cerebral hemorrhage (apoplexy), they would prolong chiefly lives past reproducing. The population would be enlarged by a host of elders, but the child crop would be no heavier.

Did their skill lie in coping with the diseases which prey upon early adult life, their success would have an immediate effect upon the growth of numbers. The lives they save would presently produce other lives, so that the effects of their efforts would be cumulative.

Finally, if it were just the children's diseases the doctors foiled, society would at first benefit only according to the number of infants and juveniles saved; but in two or three decades there would be more births owing to the fertility of these saved lives. So in this case, too, the effects would be cumulative.

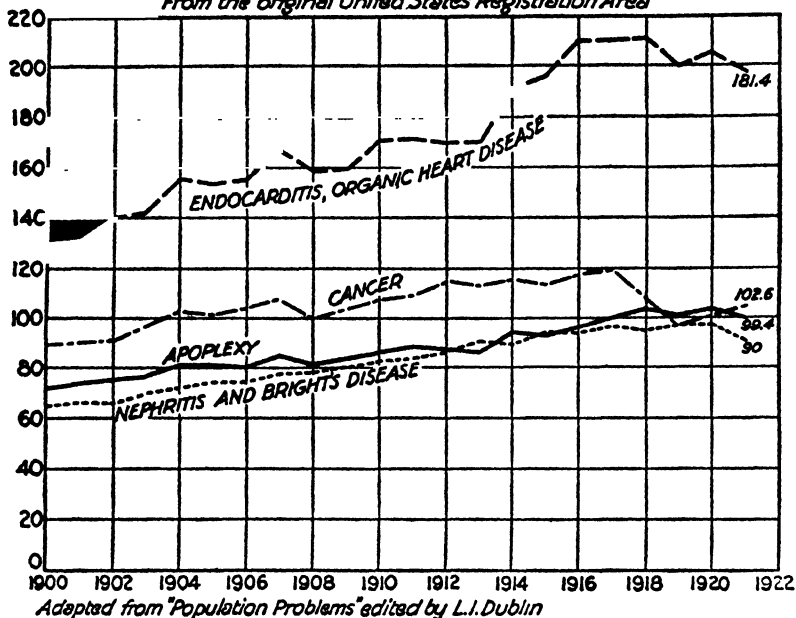
Now it is just in the conserving of infant, juvenile, and early adult lives that modern medicine has scored its big successes; while it is precisely in the field of the degenerative diseases—which attack chiefly after the reproduction period—that it has registered the fewest gains. No wonder, then, that it makes population grow like Jonah's gourd.

THE SPOILS OF HEALTH CRUSADES. There can be no question that organized systematic efforts to give the people the benefit of modern hygienic and medical knowl-

edge have borne fruit. Along some lines in a single decade we now make greater advances in life preservation than formerly occurred in a thousand years.

In the words of an eminent public health official: ¹ "The yellow fever nightmare will terrify no more. There

FIG.12- DEATH-RATES PER 100,000 POPULATION FROM
THE FOUR MOST DEADLY ORGANIC DISEASES
From the original United States Registration Area



has been practically no cholera since 1873. Smallpox, which in former epidemics sometimes attacked half the population, is a negligible cause of death. Typhus fever is a very rare disease. Plague has not been able to gain a foothold. . . . Typhoid fever is a vanishing disease. The diarrhoeal diseases caused four times as many deaths fifty years ago as now. Scarlet fever mortality has fallen ninety

¹ Dr. C. V. Chapin in "A Half Century of Public Health," 1921, p. 159.

per cent. Diphtheria has decreased nearly as much and the mortality from pulmonary tuberculosis has been cut in two."

Evaluating the antituberculosis campaign in the United States, Dr. Louis I. Dublin declared in 1923: ²

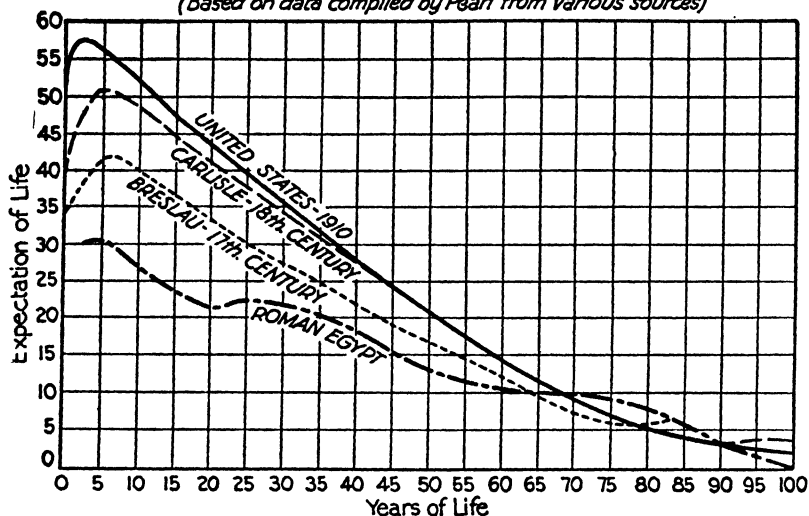
We see clearly evidences of remarkable improvement in the status of the great mass of the people; the betterment of the conditions under which they must work; the shortening of their hours of labor and the increase of their earnings. From every angle, there is good evidence that the population of America is better off. Never before in the history of the country has so favorable a change come over the environment of the people as in the years subsequent to the Great War. Those who are engaged in the anti-tuberculosis programme point to the enormous increase in the effectiveness of their organization, to the multiplication of their facilities for the care of the tuberculous, to the widespread campaign of education which has taken hold of the imagination of the people, affecting not only the school children but the whole of the population.

LIFE TERMS, ANCIENT AND MODERN. If we divide the total of the years lived by those who die by the number of deaths, we arrive at the "expectation of life at birth." Now, the labors of Latin scholars have shown that the expectation of life in ancient Rome was very low as compared with to-day. Whereas in England at the age of fifteen the expectation of life for boys is forty-five years and for girls forty-eight years, in Rome it was twenty and fifteen years respectively; whereas in England at the age of thirty the expectation of life for men is thirty-three and for women thirty-six years, in Rome it was nineteen and fourteen years respectively. Thorold Rogers tells us that in the Middle Ages the risks of death from disease

² "The Causes for the Recent Decline in Tuberculosis and the Outlook for the Future," an address before the nineteenth annual meeting of the National Tuberculosis Association.

were far greater than they are at present, medical skill was almost non-existent, the conditions of life were eminently unwholesome, and the diet of the people for fully one half of the year, though abundant, was insalubrious. "In the large towns the deaths, to judge from the returns up to the eighteenth century, greatly exceeded the births."

FIG.13- THE CHANGING EXPECTATION OF LIFE
(Based on data compiled by Pearl from various sources)



In Geneva in the sixteenth century the expectation of life was $15\frac{1}{2}$ years; in the seventeenth century, $23\frac{1}{2}$ years; in the eighteenth century, $32\frac{1}{3}$ years.

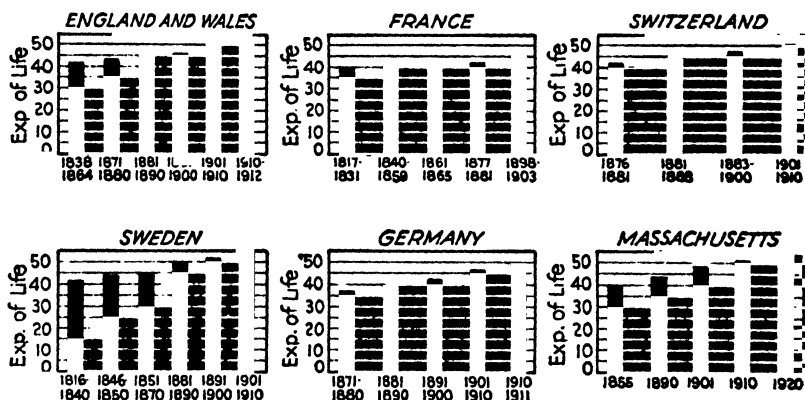
Writes Professor Irving Fisher:³ "... during the seventeenth and eighteenth centuries in Europe human life was lengthening at the rate of about four years per century. During the first three-fourths of the nineteenth century, the rate was nine years per century. During the last quarter it was 14 years per century in Massachusetts, 17 years per century in Europe in general and 27 years

³ "American Journal of Public Health," January, 1927, Vol. XVII, p. 4.

per century in Prussia in particular. More recent data show that, in the first quarter of the twentieth century, for the United States, England and Germany, life lengthened at the amazing pace of 40 years per century."

THE LENGTHENING SPAN OF LIFE. Yellow fever and cholera have no longer a place in our mortality tables. In enlightened communities smallpox has become almost a

FIG.14- EXPECTATION OF LIFE AT BIRTH

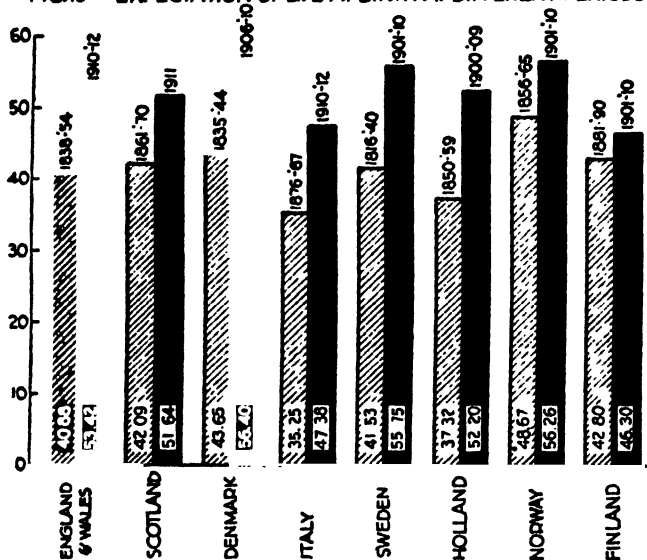


Courtesy of the Statistical Bureau - Metropolitan Life Insurance Company

curiosity. The death-rate from diphtheria is hardly a quarter of what it was twenty-five years ago. Any city can be rid of typhoid fever. In 1890 the average death-rate in the cities of the Registration Area of the United States was 22.1; the rural rate was 15.3. Now for this area the city rate is below the rural rate. In 1851 the death-rate of New York City was 50; in 1925 it was 12.2, less than a fourth. For Massachusetts the expectation of life has risen as follows: 1855, 39.77 years; 1890, 43.48 years; 1895, 45.35 years; 1901, 47.75 years; 1910, 51.19 years; and 1920, 55.25 years. On both sides of the Atlantic chil-

dren born now may expect to live two decades longer than their grandfathers. In 1901 a baby born in our Registration Area might hope to last near 50 years. The expectation of life is now 59 or 60 years. No doubt five years could be added were the American people willing to lay out \$2.50 per capita on well directed public health efforts instead of a paltry fifty cents. In Australia in a period of 35½ years the expectation of life for men increased

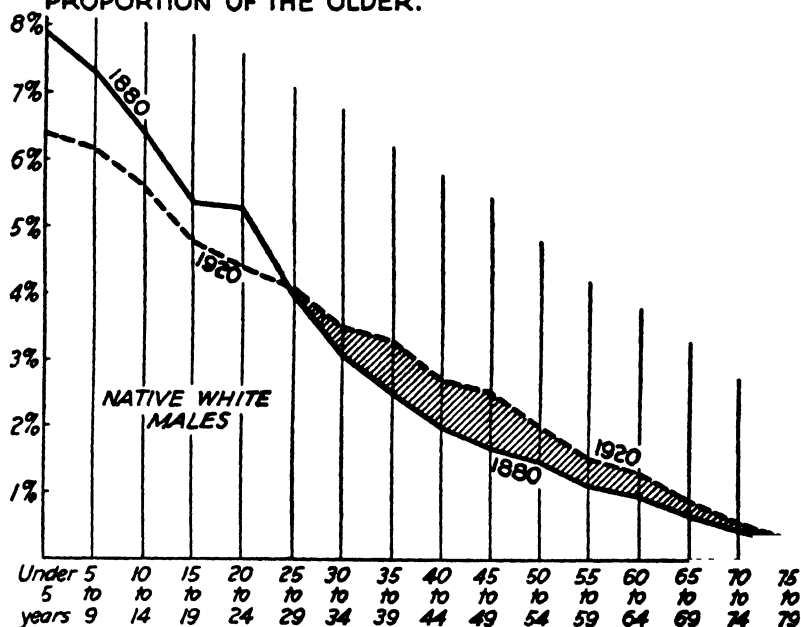
FIG. 15- EXPECTATION OF LIFE AT BIRTH AT DIFFERENT PERIODS



twelve years and that for women twelve and one half years. In New Zealand the life span has reached 62 years, slightly better than in Australia. The Scandinavian peoples are a little ahead of us, while the English press us closely with a life expectation of about 55 years. Before the war, France, Germany, Italy, and Japan had life spans of 45 to 48 years. India with an expectation of life of 23 years is a bench-mark from which ascent can be meas-

ured. Before the close of this century in some peoples the normal life may span the biblical "three score and ten." At its meeting in 1922 the American Public Health Association adopted a resolution which included the statement, "We, the health workers of our communities, are confident

FIG. 15A. AGE GROUPING OF NATIVE WHITE MALES IN THE UNITED STATES, 1880 AND 1920. THE SHADED AREA INDICATES THE 40-YEAR INCREASE IN THE PROPORTION OF THE OLDER.



that there is nothing inherently impracticable or extravagant in the proposal we make that many nations may attain such knowledge of the laws of health, appropriate to each age and occupation, to each climate and race, that within the next fifty years as much as twenty years may be added to the expectancy of life (55 years) which now prevails throughout the United States. . . ."

SOCIAL EFFECTS OF GREATER LONGEVITY. Just here a social problem begins to loom. There are now upwards of five and a half million persons above sixty-five years of age in the United States, and every year this cohort is relatively larger. Soon every advanced people will include such legions of the elderly as have never been known since the days of Methuselah. In a stationary population the middle-aged will be half again as numerous as they have been in the recent past, while the army of veterans will be doubled. Will the gains in span of life be chiefly years of happy work, or years of feebleness and dependency? Will the mood of society take color from a growing contingent in whom desire fails, who find the grasshopper a burden, and who say of their days, "I have no pleasure in them"? What a pity if in the social fabric the drab of age should encroach on the bright hues of youth!

Then what dread of the new, what senseless conservatism may rule when society teems with graybeards! In the nineteenth century the tillers of society were in the hands of men about fifteen years older than the helmsmen of the sixteenth century. By the dawn of the twenty-first century the average may have risen another fifteen years. Most of us love security and money more, creation and construction less, as the years pile snow on our heads. When Nestors abound and everywhere sit tight in the seats of authority, how bitter may become the feud between them and the energetic, eager progressives under forty! With our grandchildren age-conflict may bulk nearly as large as class-conflict has come to bulk with us in the course of a generation.

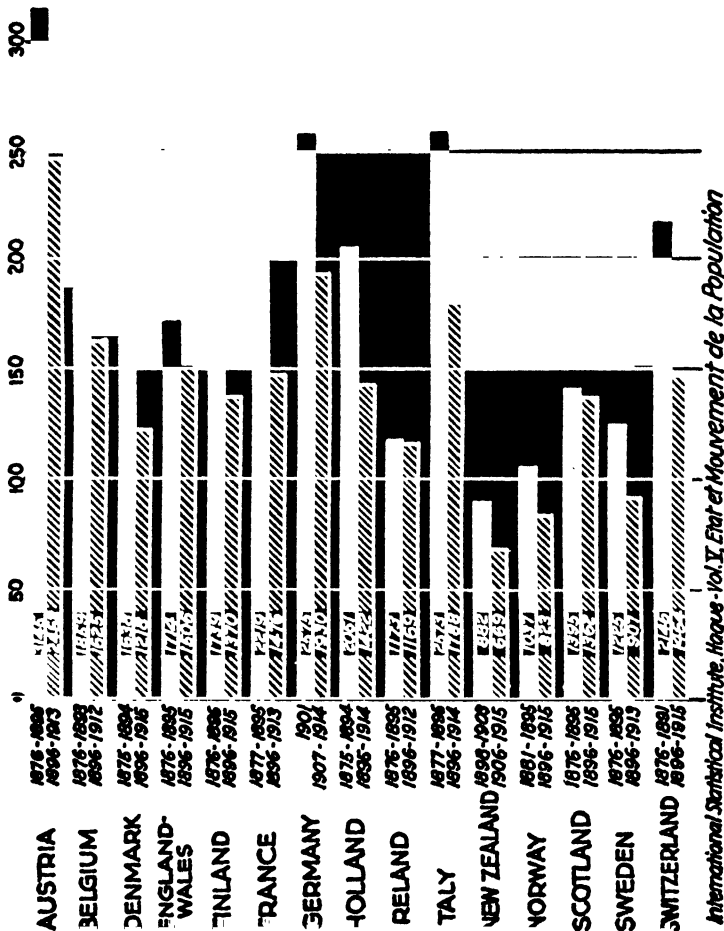
Perhaps the psychologists will be able to devise a mental hygiene that will enable the able-bodied vigorous old to retain their suppleness of mind, ardor, and venturesomeness.

THE SAVING OF THE INNOCENTS. Until lately the life of the race, as heedless as the car of Juggernaut, has moved forward over the corpses of babies. In the latter part of the eighteenth century half the infants born in London died under two years, although in the healthy English country-side six out of seven might survive the third year. Our grandparents, if they were city dwellers, lost one child in four before it was a year old. Before the World War a quarter of the babies born in Hungary and Russia failed to live a year. Two decades ago Moscow was losing forty-eight babies out of a hundred. In Chile in 1913 I found even the reported loss to be one third (now a fourth), but in some of the larger cities 47 per cent faded away. As for the Orient, the futility of its blind spawning is horrifying. Manila, 1903-11, showed an infant mortality rate of 552 per thousand. In Bombay in 1921 55 per cent of the infants failed to live out a year, and there are factory cities in British India which lose three fifths. When the Japanese took the first census of the two and a half million Chinese in Formosa, the number returned as "six months old but not yet seven" was but half of the number returned as "under one month." *Half of the babies failed to live even six months.*

On the other hand, where the lessons of modern hygiene and medicine have been taken to heart, infants flourish and bloom as if led by guardian angels. There are now thirteen peoples which get more than nine tenths of their babies through the first year. In England and in London there are less than seventy infant deaths per thousand births, which is about the figure for the Registration Area of the United States. In thirty years Australia has cut its infant mortality nearly one half. It is New Zealand, however, which holds the world's record for good mothering, since she loses in the first year but one baby in twenty-

five! Back through all human experience, spanning, say, half a million years, the equal of this has never been known. Product of brains, heart, and team-work, it is as much entitled to rank among the "wonders of the world" as the Pyramids of Egypt, the Hanging Gardens of Babylon, or the Panama Canal.

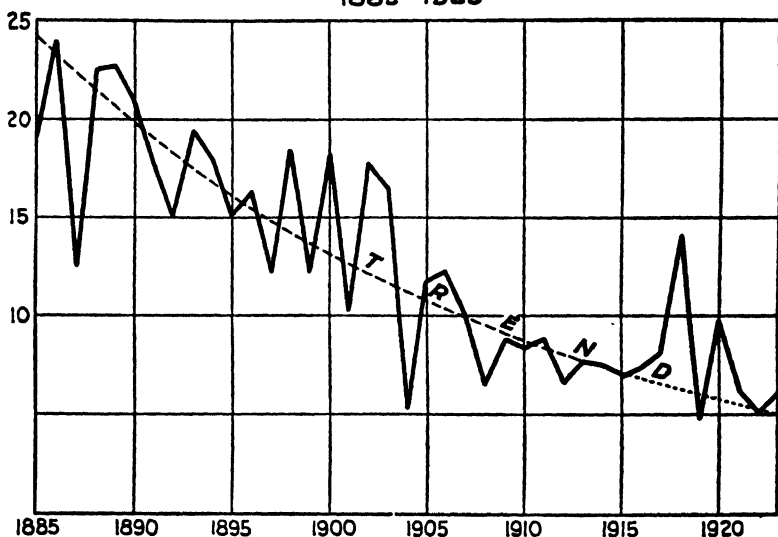
FIG.16- DEATHS UNDER ONE YEAR (STILLBIRTHS NOT INCLUDED, PER 10,000 INFANTS UNDER ONE YEAR†



International Statistical Institute, Hague - Vol. IX, Etat et Mouvement de la Population

We Americans stand but seventh among baby-saving peoples. Still there are sizable residential cities which like Dunedin, New Zealand, save twenty-six babies out of twenty-seven.⁴ It is doubtful if the poverty and over-

FIG.17- DEATH RATES PER 100,000 FOR WHOOPING COUGH IN TWENTY-THREE AMERICAN CITIES
1885 - 1923



The trend line does not fit the data for 1915-1923 but is a continuation of the trend 1885-1915.

Courtesy of the Statistical Bureau of the Metropolitan Life Insurance Company.

crowding which prevail generally throughout the Oriental world, in addition to immaturity of mothers, fatalism, superstition, and caste, would permit of saving more than five infants out of six, no matter what measures might

⁴ No babies in the world are better looked after than those of royalty. For the 881 children born up to the end of 1923 from the marriages made 1890-1909 in the sovereign and mediatized families of Europe the first year mortality was 26 per 1000. It is not rash to predict that within a few decades the families of American skilled laborers will register as low an infant mortality as this.

be taken to instruct mothers and safeguard the milk supply; but it is safe to insist that to-day any Western people can save nine out of ten if it really wants to.

Since until recently probably one or two out of every five infants perished in the cradle, dare we continue to bring them into the world at the old rate now that we are able to save nearly all of them? How silly to go on welcoming birth-frequency just as if no such revolution had occurred! To shut our eyes and trust to Providence is to pattern after the stupid ostrich hiding its head in the sand.

IMPLICATIONS. But what El Dorado the human race has come into! And so suddenly! There was great work going on in the bacteriological laboratories in 1880-1900, but the amazing reduction in the death-rate has come chiefly since 1900. Humanity's great streak of luck has, in fact, begun to be visible only in the last fifteen years; so most leaders of thought are still serenely unaware that, without noticing it at the time, the head of the human column crossed a divide and now looks down on a new and smiling land.

Much doctrinal hardtack that seemed precious to our ancestors wandering in the stony wilderness should be thrown away now that vine and myrtle are in view! As, for example, that life is short and uncertain, that health and sickness are "sent," that an epidemic is God's chastisement, that the earth is still in need of "replenishing," that every birth is a proper occasion for felicitation, that the dull begetter of sixteen morons has earned his country's gratitude, that all healthy young are social assets, that to breed without concern like animals is "God's way," that "God sends babies and he will take care of them," that "when God sends mouths he sends meat," that infants born but to misery and early death brighten God's

glory, that woman is here for maternity and for little else, that her foreordained lot is to bear a dozen, half of whom will die in the cradle, that for her to crave any other life is unwomanly and impious, that questions relative to reproduction must be hedged with silence, that every delicate inquiry is permitted to the confessional but none to the platform, that mental defectives have a "natural right" to breed their kind, that man has a "natural right" to migrate, that for this reason every people is under solemn obligation to admit such population surplus as may be produced in any quarter of the globe.

Away with this baggage of dogma from the life-losing Past! Let us reëxamine all these matters in the light of the life-saving Present.

CHAPTER VIII

THE GROWTH OF POPULATION

ON the whole the growth of population is not a purposive or guided process. The statesman, it is true, may in some degree repress or stimulate it. Religious leaders affect it decidedly by their teachings respecting illicit sexual commerce, the importance of marriage and progeny, the proper age of marrying, and the practices of infanticide, abortion, and contraception. The bulk of the people, however, do not heed the rising of the human tide, deem it good or bad, or consider what is their duty in the matter. Even if each couple should produce only the children it wanted, the resulting growth of population would be as unwilling as is the volume of immigration or a climb in the totals of foreign trade. But, for at least five sixths of mankind, progeny are not willed but are the chance by-product of acts prompted by love or sex appetite; so that in a double sense the expansion of a human population is a natural phenomenon like the increase of deer in the forest.

CONJUGAL FRUITFULNESS AND POPULATION GROWTH. If fertile unions produce on the average *four* children who survive and become parents in their turn, then the population doubles in a generation. After three generations the population will have reached eight times its original size. If we allow three generations to a century, then in two centuries the people will be 64 times as numerous as at first, and in three centuries 512 times as numerous. That

such a rate of growth is not purely theoretical is shown by the record of the French in Canada. The 5800 French known to have settled there before 1680 had expanded by 1920 to more than three millions, an expansion of more than five hundred fold in something more than 240 years.

If the average fertile couple hands the torch of life to *three* fruitful children, then—allowing three generations to a century—population is doubling in 56 years. At the end of a century it will be nearly $3\frac{1}{2}$ times as numerous; at the end of two centuries 12 times; at the end of three centuries 40 times. Just before the World War most of Europe was multiplying even faster than this. At this rate a single million of human beings on this globe at the end of the Crusades would by now have populated it as it is to-day!

How many children a couple must have in order that a given number may grow up, marry, and rear offspring, depends upon how many die early, how many never marry, how many who marry are childless. In 1920 in the United States Registration Area a thousand fertile couples would have had to produce 3100 children in order that from them should proceed another thousand fertile couples. Let us call this a *replacing birth-rate*. If such a population is to grow at the rate of $1\frac{1}{4}$ per cent annually, which means an increase of one half in each generation, the average couple must produce $4\frac{2}{3}$ children. If for each married pair there are to be *two* in the next generation, the births per family must average 6.2.

Comparing ourselves with our colonial forefathers or with the contemporary Slavs, we find that our losses of children are far smaller, our tendency to marry is nearly as great as ever, and our proportion of infertile marriages is as three to one. Among our forebears in the days of

Queen Elizabeth a replacing birth-rate would have called for about six births to a couple, while a doubling birth-rate would have required from the average married pair close to twelve births. In ruder and more ignorant times, and in the densely peopled Asia of to-day, seven or eight births do not more than suffice to replace the parents; so that population cannot grow unless the families run still bigger.

FACTORS OF POPULATION GROWTH. Aside from migration, the rate of a population's growth depends upon two variables, births and deaths. It is chiefly the wide fluctuations in deaths which have made population growth so uneven; births are rather steady. The capacity to breed is commonplace, nothing to brag of; by no means so good an index of vitality as the power to resist disease or to reach old age. One must smile when Japanese editors vaunt the "virility" which adds yearly three quarters of a million to the population of Japan, when Signor Mussolini extols an annual excess of half a million births in Italy as "proof of the extraordinary vital energy of our race." What people could not do as much if it wanted to? As John Ruskin said, "A people need not boast of multiplying . . . if it multiplies only as flies or locusts do, with the god of flies for its god."

The great waxing of peoples since about 1800 has been due to two groups of causes, the *economic* and the *sanitary*. The former includes the wonderful quickening of wealth production brought about by the triumph of the machine, the applications of scientific knowledge to agriculture and industry, the spread of the use of water-power, steam, and electricity in manufacturing and transportation, the expansion of world trade, vast overseas migration leading to the rapid peoplement and subdual of great fertile areas in the temperate zone, the diffusion of

knowledge, the improvement of government, and the bringing of the Tropics with their natural resources under the control of the advanced peoples. These have not only done away with famines and the life-destroying wretchedness which prevailed often among the masses but have opened such vistas of hope that postponement of marriage, religious celibacy, abortion, and infanticide are no longer customary means of keeping numbers down.

Until the nineteenth century the vast stored-up wealth of the earth had scarcely been touched. Within the last century and a quarter, however, Nature has been forced to do much more than yield a mere annuity; she has been made to surrender principal as well. The present age witnesses, therefore, a whirlwind attack all over the world upon the slowly stored resources of forest, field, and mine, and, in consequence, an unprecedented increase of human beings. Mankind's consumption of commercial minerals in the last twenty years equals all that had previously been consumed in the history of our race. At the rate consumption is increasing as much will be taken in the next thirty-five years as has been taken in all the past. Imagine our plight to-day if such an attack as we are now making upon Nature's resources had been launched in the first century of our era instead of the nineteenth and had been kept up during the intervening centuries! Rossiter, who has called attention to this process, speaks of "the assault by fast increasing millions upon the stored-up resources of the earth at a rate insuring exhaustion at no very distant date if the drain continues unchecked."

The other cause of accelerated growth is our dazzling success in shackling disease since the discovery of pathogenic micro-organisms. The *economic* causes of population growth have been operating for more than a century

and are generally understood. The *sanitary* cause has registered its great triumphs only in our generation, and as yet few realize how greatly it has altered humanity's outlook.

THE INCREASE OF THE ENGLISH SPEAKERS. In 1696 Gregory King, an English pioneer in vital statistics, calculated that the most people England can support is twenty-two millions, which figure should be reached about the thirty-fifth century "in case the world should last so long." He computed that in 1900 the folk should number seven and a third millions—a quarter of what it actually was at that date. So little could any one in his time foresee how population would respond to the applications of science in commerce, industry, and public health!

At the opening of the nineteenth century the population of England and Wales, probably a little over 6,000,000 in 1700, was about 9,000,000, but on the threshold of the twentieth century it was 32,500,000, i. e., had multiplied three and a half times in a hundred years. "Had our forefathers since the days of William the Conqueror," observes Bland,¹ "been in a position to achieve a birth rate and a death rate similar to those of England and Wales in the nineteenth century, the present population of this tight little island—without allowing for any contribution from Scotland—would be somewhere in the neighborhood of 150,000,000."

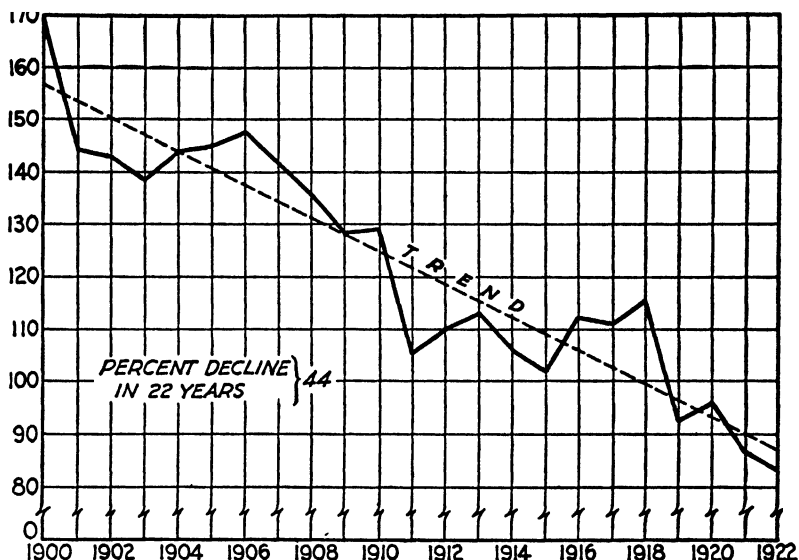
According to Harold Cox:² "The population of England and Wales doubled in the fifty years between 1801 and 1851; it again doubled in the sixty years ending in 1911. Suppose the previous rate of increase had been

¹ J. O. P. Bland, "Population and the Food Supply," "Edinburgh Review," Vol. 227, 1918, pp. 238-239.

² "Problems of Population and Parenthood," 1920, p. 316.

maintained and were to be continued indefinitely, then in the year 2201, or less than three centuries from the present date, the population of England and Wales alone would be 2,295,000,000 or considerably more than any estimate of the present population of the whole globe."

FIG.18- DEATH RATES PER 1000 INFANTS UNDER ONE YEAR OF AGE



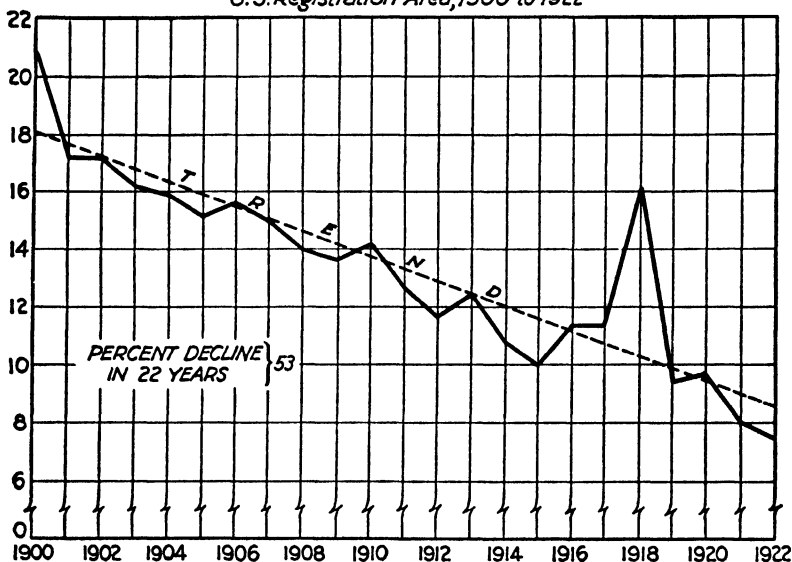
250,000 infants now survive the first year of life who would die if the 1900 deathrate continued to prevail. The decline in infant mortality since 1900 means an addition of 3.8 years to the average expected life-span at birth.

Courtesy of the Statistical Bureau of the Metropolitan Life Insurance Company

The waxing of the British peoples has been prodigious. The population of Great Britain in 1712 has been estimated at 9,000,000. During the eighteenth century "Great Britain contributed from this small population the stock which formed the larger part of the white population of the United States in 1790," and which increased by 1900 to approximately 35,000,000 souls. In 1801 the popula-

tion of the United Kingdom was 16,200,000; by 1900 it had increased to 41,000,000 besides contributing "to the population of the United States and to that of a score of younger colonies." . . . "In magnitude there appears to be no parallel in history for this population achievement of the British race from 1700 to 1900."⁸

FIG.19- DEATH RATES PER 1000 CHILDREN
AT AGES ONE TO FOUR YEARS
U.S. Registration Area, 1900 to 1922



The reduction of infant mortality has not hampered the reduction of child mortality.

Courtesy of the Statistical Bureau of the Metropolitan Life Insurance Company

The unequaled expansion of the American people owes much, of course, to the thirty-three millions of European immigrants and to their descendants. But the U. S. Census Bureau calculates that the 4,400,000 whites in

⁸ "A Century of Population Growth in the United States, 1790-1900." Bureau of the Census, 1909, p. 91.

the United States in 1800 had expanded to 37,290,000 by 1900—an eightfold increase in a century—and to 47,330,000 by 1920. During the last sixteen years the Registration Area of the United States noted 41,000,000 births and 22,000,000 deaths. To this natural increase of 19,000,000, immigration added 5,500,000 persons. In 1924, 2,545,000 were born while 1,333,000 died—say, two births to one death. Since 1911, thanks to the public health wizards, the number of deaths has remained about constant, while births have increased by nearly 11 per cent and the population has grown by some 21 per cent.

The English-speaking whites of the world have increased nearly eightfold since 1800, owing partly to their settling North America and Australasia and partly to their early and shrewd use of economic and sanitary discoveries. They now form more than a fourth of all the population of European descent, whereas in 1800 they were less than one eighth.

THE INCREASE OF EUROPEAN BLOOD. At the peak of the the classic Greco-Roman civilization periodical famines and epidemics, continual warfare, private strifes and political massacres, reinforced by a ubiquitous slavery which denied mating and parenthood to countless slaves, discouraged the growth of numbers. Beloch estimates that, at the death of Augustus, the whole Roman Empire contained not more than fifty-four million human beings—a tenth fewer than the Japanese to-day. Italy when mistress of the world had but one sixth the population she has now.

Beloch allows ⁴ Europe thirty millions at the beginning of the Christian era. Rossiter allows it nineteen millions in 1000 A.D. It is supposed to have had eighty million

⁴ J. Beloch, "Die Bevölkerung der Griechisch-Römischen Welt," 1886, p. 502.

inhabitants in 1700 when it was still in the hand-power stage. Its growth the first half of the eighteenth century was not so rapid but that Voltaire could remark in 1757, "It requires very favorable circumstances for population to grow five per cent in a century." In 1750 it had, perhaps, 125-130 millions. Then came machinery and steam. By the end of the century its population had expanded to 180,000,000, while in the last fifty years Europe's rate of increase has been unexampled in history. Says Austin: ⁵ "The population of Europe in 1772 was only 142,000,000. From 1772 to 1872 the increase was at the rate of about 16 per cent for each 20-year period. Since that time it has been much more rapid; practically 20 per cent in the 20-year period 1872 to 1892, and a 26 per cent increase in the 20-year period 1892 to 1912."

In his presidential address before the American Statistical Association, December, 1922, Rossiter says: ⁶

It is not probable that the immense increase during the century which elapsed from 1810-15 to 1910-20 in the number of human beings of European blood residing in Europe and elsewhere had a counterpart on any considerable scale at any other period of human history. . . .

In 1815, just as the Napoleonic wars ended, the population of Europe, including the number or equivalent of persons of European blood in the Americas and elsewhere throughout the world, probably did not much exceed 210,000,000 persons. A century later, as Europe was entering upon a great war exceeding in misery and costliness all earlier conflicts, the population of Europe, and again including persons of European origin in the Americas and elsewhere, approximated 645,000,000.

⁵ O. P. Austin, "The Remarkable Growth of Europe during Forty Years of Peace," "National Geographic Magazine," Vol. 26, pp. 272-277, September, 1914.

⁶ W. S. Rossiter, "The Adventure of Population Growth," "Journal of the American Statistical Association," March, 1923.

Were this rate of increase to be maintained for another century, i. e., until 2020, the number of persons of European blood on our planet would approximate two billions. It is significant that in the first half-century after 1810 the population of Europe increased 51 per cent and in the next half-century 55 per cent. By 1915 Europe appears to have arrived at 460,000,000 inhabitants, although in the hundred years she had lost more than forty millions of her children by migration overseas. Whoever expects this proliferation to go on and on without end would look for a corn-stalk to pierce the sky because it will grow an inch in a July night.

THE INCREASE OF THE NON-WHITES UNDER THE RULE OF WHITES. Zeus—so runs an old Greek legend—would destroy mankind by a flood. But Deucalion and his wife Pyrrha saved themselves in a vessel which settled at last on top of Mount Parnassus. Consulting the oracle as to how to replenish mankind, they were told to veil their faces and cast behind them “the bones of their mother,” i. e., stones. They did so; the stones thrown by Deucalion became men, while those thrown by Pyrrha became women.

As peoplers, the white officials, capitalists, and managers who have taken over the control of tropical lands in order to make them “pay” have clean outdistanced Deucalion and Pyrrha. Had they all taken to casting stones over the shoulder and kept it up steadily for full working hours they could never have called humans into being as rapidly as they have been doing it by their political and economic policies. During the sixty years 1860–1920 the peoples in the tropical colonies and dependencies of the great nations added to themselves *105 millions*—a twelfth of mankind in 1860 and equal nearly to the present inhabitants of the United States, yet a popula-

tion un contemplated and unwilling, a chance by-product, so to speak, of capitalistic industry in the tropics.

During forty years of British rule in Egypt, 1882-1922, the population doubled. In the Nile Valley to-day there are not far from seven million souls who might well regard the British as their godfathers. But for the Occupation most of them would never have been called into life, or else would have quitted it before the census-taker made his rounds. Galled by a sense of inferiority, the more self-conscious Egyptians "compensate" by furious anti-British agitation. Few of them realize that most of the Egyptian pullulation is due to factors which the British introduced and that widespread misery attended by decline in numbers is inevitable unless the Egyptians can handle police, justice, railways, and irrigation works *about as well* as the British have been handling them.

Since the fall of Napoleon III the natives of Algeria have doubled. Thanks to the cultural elements the French introduced among this hidebound people, three millions are engaged in the Great Adventure of living who otherwise would be moldering under the sand, or else would never have been summoned from the limbo of the unborn. It is safe to say that few natives ever reflect that half of them all dwell not on the familiar natural soil but on a mole of added production and trade built by French ability, science, and capital.

In India there is endless debate as to whether the lot of the masses has really improved under British rule. It is a knotty point, and even the experts disagree. Those who deny that the masses are any better off draw the conclusion that the British have pocketed the new wealth brought into being by the railways, the irrigation works, the tea gardens, silk culture, cotton, jute and steel mills, and other alien factors injected into the Indian economy.

They ignore the Himalayan fact that *in forty years the people of India have increased their numbers by fifty millions, or 20 per cent.* Such myriads of extra mouths can eat big holes in a new prosperity, and it may be that here is India's missing dividend from the economic development the British have instigated. Instead of living better, the natives appear to have spent their share in calling fifty million more souls into a crowded land. Certain it is that, were the British to step out of the picture abruptly, not only would expansion cease but millions already there would starve. While starving, their frenzied mass movements would dislocate industry and trade and hence still other millions would be doomed.

The response of the folk of the Philippines to the American occupation is a portent. They have added five millions in a quarter of a century. You would suppose that this growth would either rejoice or depress Filipino leaders. It does neither; it is ignored. Mere vegetative expansion inspires in most of us neither contentment nor gratitude; what we crave is the Better Life. Nearly all the benefits white control brings to the denizens of the tropics are absorbed by them in mere numerical increase; yet this increase does not make them love foreign domination.

In less than fifty years the Singhalese have doubled, whereas, before the whites took hold, they were doubtless as stationary as were the Japanese in their hermit phase. Thanks to the spread of the scientific, great-scale growing of cocoanuts, rubber, cinnamon, and tea for foreign markets, the soil of Ceylon has become a gold mine. The local result, however, is not much gain in ease, comfort, and culture, but a prodigious spawning of coolies only little better off than their fathers were.

The white man's insatiable demand for rubber and tin

has caused the inhabitants of the Federated Malay States to double in number in twenty years. In half a century the people of the Straits Settlements have tripled. In sixty years British Guiana has doubled, while Trinidad has quadrupled. The blacks of Jamaica, "a veritable forcing house for pickaninnies," have doubled in half a century, while the whites, once a tenth of the inhabitants, have declined to a fiftieth. In South Africa the Kaffirs are breeding so fast "under the white man's broad shield" (as they say) that the thoughtful doubt if there is any future for the white race there.

But the star rôle in proliferation is played by the Javanese. Java, which is about as large as the State of New York, is peopled by thirty-seven millions—nine times as many as in 1800. The shrewd Dutch administrators have made of the Javanese a race of Robots, beings brought into existence to work. While there are in Java no factories like those described in "R.U.R." where one might watch the large-scale manufacture of bones, the spinning of fine nerve threads on intricate machines, or the miles of intestines reeled on huge wheels, it is nevertheless true that the vast Javanese population of to-day has been produced by and for industry—a capitalistic industry of which the management and the profits are entirely in the hands of the Dutch. Java is the acme of the European colonial system, one fruit of which is a longer procession of laden colored laborers crossing the bridge of life. The endless spectacle of burdened shoulders and bent backs moved a recent American visitor to Java to exclaim, "A Polynesian transported to a scene of conventional Javanese activity would at once devoutly believe the worst that missionaries have told him about hell!"

How little the white empires realize what they are doing appears from considering the record of the Americans

in Porto Rico. When we took over the island, births and deaths balanced at about 26 per thousand annually. Being the world's crack sanitarians, we presently reduced the death-rate to 18, while under the stimulus of prosperity the birth-rate rose to 37—which would double the inhabitants in thirty-seven years. Population leaped forward until now the island is, next to Java, the most densely peopled agricultural region in the world—nearly four hundred to the square mile. No wonder life is getting harder than it was in the old days when disease thinned the people out. There are not jobs enough to go round, and sentiment against the profits reaped by non-resident capitalists is rapidly rising. Had we multiplied chances to earn a living as fast as we saved lives, the Porto Ricans would now find life easier. We did both, but our sanitary exploits surpassed even our industrial exploits. The symptoms of overpopulation are plain, yet the American governor does not dare suggest the obvious remedy—birth-control. He recommends that the overflow migrate to Santo Domingo—there, of course, to repeat the performance on a new stage!

And when Santo Domingo is full?

PROMOTIVE IMPERIALISM. Not always has the white man's yoke encouraged native increase. Within the century after Columbus found the West Indies their original inhabitants were extinct. The Indians of Mexico and Peru withered away under the ruthless Spanish methods. In the freezing galleries of the famous "mountain of silver" at Potosí in the Andes three miles above sea-level tens of thousands of forced laborers toiled their lives out. It has only been thirty years since the blacks of the Belgian Congo were fleeing rubber exactions enforced by hacking off the left hand! To-day it is the Portuguese that are losing the natives. The borders of Angola and

Mozambique are being depopulated because of the exodus of the natives into Belgian Congo or Rhodesia in order to escape forced labor.

As a rule, however, the white race is to-day *serving as midwife to the blacks and the browns*. For, when it comes to getting the most out of nature, the white man has a tall bag of tricks. He sets the coolies to clearing jungle and, lo! tea gardens, cocoa groves, coffee orchards, pineapple fields, cane plantations, and rubber groves. He has them build roads, dig for minerals, dam rivers, and cut irrigation ditches. Moreover, he squelches intertribal wars, puts down "leopard" societies, bans witch-smellings, curbs epidemics, and heals the sick like a magician. Result: a herring-like increase which disturbs the world balance of races. Eventually there will be stronger pressure on the protecting dikes reared by the white peoples because their sun-helmeted sons in the tropics have casually summoned into existence myriads of blacks and browns in order to make a profit off them. Indeed, the economic imperialist would be wroth if the natives did not multiply like rabbits and furnish an abundance of labor at a bare subsistence wage. Should they make labor scarcer and dearer by practising birth-control, the European employers would promptly import coolies, as so often they have done, from those inexhaustible reservoirs, India, China, and Java. For, if they are to reap big profits, they must have thick files of human vegetables.

What may be called *promotive imperialism* is, indeed, the greatest population-encourager humanity has ever known. It is not a vampire on the weaker peoples as was the old blood-sucking imperialism. On the contrary, wherever it goes, the natives double and redouble like fruit-flies about an overripe banana.

PROMOTIVE IMPERIALISM VERSUS CHRISTIAN MISSIONS.

But what a contrast between it and that other mode of action of the whites upon the colored peoples, viz., Christian missions. Imperialism treats whole sections of humanity as if they were draft-animals on the farm, to be given their fodder and treated humanely, but required to work as they are told and leave to the masters all important thought and decision.

The missionary, on the other hand, instead of making fodder more plentiful, stimulates the roots of personality by emphasizing the worth-possibilities of the individual, setting higher goals for human life, stressing the dignity of the female sex. He breaks the yoke of ancient religious beliefs and customs which make men as torpid and un-aspiring as carrots. Stirring up resistance to child marriage and girl motherhood, he thrusts a crowbar into the Oriental system of mad multiplication. Thanks to missionary teaching, the native girl gets a chance to mature and glimpses a vision of life's glorious possibilities which makes her rebel at being a mere breeding machine. By stirring people up to seek knowledge, by leading them into new regions of religious thought, by insisting upon a higher domestic position for the wife, by giving couples a new notion of what they owe their children, especially their daughters, the wiser missionaries release forces which ultimately will take care of the population problem.

THE INCREASE OF INDEPENDENT NON-WHITES WHO HAVE ADOPTED EUROPEAN CIVILIZATION. The most instructive example of how the taking over of the main features of Western civilization accelerates human increase is the case of Japan. Three censuses of Japan are said to have been taken, in 1721, 1726, and 1732, each showing a population of between twenty-six and twenty-seven millions. A century later another census was taken

showing a population of 27,200,000, indicating that for a hundred years the population of Japan had been virtually stationary.

How the population of Japan was kept stationary for so long is now no mystery. The customs of abortion and infanticide prevailed all over the country. In 1767 an official order said in part: "We understand that in some provinces farmers who have already many children put to death new-born babies immediately after their birth. This is a very inhuman act. Village officials must see that no such crime is committed in their villages, while farmers themselves should keep watch upon one another in order to prevent such crimes." In Kiusiu there was a custom of killing two out of five children born to their parents. In some districts practically all the infants whose births were reported to the local authorities were boys. In Hiuga province, only the first-born was allowed to live. It was even thought better to buy children who had been kidnapped in the larger centers than to bring up one's own children. Infanticide was called "thinning," which shows that it was regarded like thinning a stand of radishes.⁷

With the new era opened by Japan's deliberate appropriation of the certain coveted elements of Western culture came an economic progress which made it possible for the population to grow without lowering its standard of living. At the same time abortion and infanticide came under heavier condemnation. In 1871, only three years after Japan had been opened to the influence of foreign trade and of modern European institutions, the population was returned as 32,900,000. By the end of 1925

⁷ Professor E. Hondo, "The Agrarian Problem in the Tokugawa Régime," "Kioto University Economic Review," December, 1926.

Japan proper had sixty millions. In five years the increase has been four millions.

THE RECENT INCREASE OF MANKIND. Estimates of the total population of the globe were made as early as 1660, but it is only since the great extension of census enumeration that such figures have emerged from the realm of pure conjecture. The important estimates of the last fifty years (in millions) are as follows:

1876 Behm und Wagner	1424
1878 Behm und Wagner	1439
1878 Levasseur	1439
1880 Behm und Wagner	1455
1882 Behm und Wagner	1434
1886 Lavasseur	1483
1890 Ravenstein	1468
1891 Wagner and Supan	1480
1891-92 Hübner's Tabellen	1555
1892 Levasseur	1497
1893 von Juraschek	1486
1894 von Juraschek	1497
1895 von Juraschek	1502
1896 von Juraschek	1512
1896 Whitaker's Almanac	1493
1898 Whitaker's Almanac	1477
1900 Supan	1503
1900 Sundbarg	1607
1901 von Juraschek	1558
1908 Sundbarg	1648
1911 Hoffman	1749
1912 Whitaker's Almanac	1623
1913 Whitaker's International	1721
1918 Whitaker's Almanac	1656
1924 Whitaker's Almanac	1850
1924 International Statistical Institute	1895

Using the results of the enumerations around 1910 the International Statistical Institute arrived at the figure of 1,620,094,000 for the world. Ten years later its figure is 1,791,496,000, a gain of 10.6 per cent in the decade. Between 1920 and 1924 it reports an increase of 103,378,000 or 5.77 per cent—a rate which would double mankind in a half-century! Estimates put out in 1927 for the League of Nations give the population of the earth as 850 millions in 1800 and 1800 millions now. The present rate of annual increase is given as from 1 to 1.2 per cent.

Sir George K. Knibbs, statistician of the Australian Commonwealth, in his work, "The Mathematical Theory of Population," finds that in the pre-war quinquennium 1906–11, the twenty-six leading countries of the world possessing accurate statistics were increasing at the rate of 11.59 per thousand ($1\frac{1}{6}$ per cent) per annum. For the period 1804–1914 he calculates the annual increase of world population to have been on an average 8.64 per thousand, which doubles a population in about eighty-one years. As to the relation of such speed to the snail's pace of the past, Sir George says:

Either this rate of increase [11.59] must be enormously greater than has existed in the past history of the world or enormous numbers of human beings must have been blotted out by catastrophes of various kinds from time to time. For, putting the present [1914] population at 1,649,000,000, at the average rate of increase [11.59] this number would be produced from a single pair of human beings in about 1782 years, that is to say, since A.D. 132 . . . Even the rate given by the world populations 1804 and 1914, viz., 8.64, gives only 2,397 years, carrying us back only to B.C. 483, or since the days of Darius I of Persia.

PROSPECTS OF FUTURE HUMAN INCREASE. If Sir George is right, then in the lifetime of the average person born

this year (1927) in the United States, as many human beings may be added to mankind as were developed in all the 1500-2000 generations during which the human race has been spreading over the planet! Daily 100,000 die and 150,000 are born. Each sun beholds 50,000 more on our planet. Certainly never before in the life of our race has human propagation presented so acute a problem as it does to-day. No wonder the students of census figures sound a gong to wake people up.

Sir George's conclusion is pregnant with significance:

The ordinary rates of population increase, small as they may appear to some investigators, are sufficient to bring about, in a relatively short time, trouble from overpopulation, at least in countries where the population density is already appreciable. . . . The limits of human expansion are much nearer than popular opinion imagines; the difficulty of future food supply will soon be of the gravest character; the exhaustion of forces of energy necessary for any notable increase of population or advance in the standard of living, or both combined, is perilously near. . . . The present rate of increase in the world's population . . . doubles the population in 60.15 years, and gives a population 3.16 times as great in 100 years; thus in 200 years the population will have increased 10-fold and in 400 years 100-fold. We thus get at the end of successive centuries the following populations, in round numbers: 100 years 5,380,000,000; 200 years, 17,040,000,000; 300 years, 53,930,000,000; 400 years, 170,710,000,000.

At this rate even if humanity's food problem were to be solved once and for all by the fall of the nitrogen of the atmosphere in the form of a constant rain of manna, there would not be a square yard of arable land to a person a thousand years hence. At a date no more distant from us than is the capture of Jerusalem by the Crusaders,

humanity would be justified in hanging out on our planet the sign, **STANDING ROOM ONLY.**

HOW GROWTH OF NUMBERS SWALLOWS THE FRUITS OF MATERIAL PROGRESS. About fifty years ago the note of pessimism began to mar the jubilee chorus of the mid-nineteenth century; complaints that Science has not fulfilled the hopes she inspired; that Invention, for all her waving of an enchanter's wand, has not made life much easier for the masses; that the faith in Social Progress, so prevalent in the second and third quarters of the nineteenth century, has not been justified by the course of events. Among many intellectuals the conviction spread that civilization does not banish poverty and misery, that progress is an illusion, that the blessings expected from our wondrous machines and our fairy-like command of natural forces have not arrived. John Stuart Mill confessed, "It is questionable if all the mechanical inventions yet made have lightened the day's toil of any human being"; while Henry George wrote a book which became world-famous in order to explain "the increase of want with increase of wealth."

So far as it has any solid basis, this sense of disillusionment springs from the fact that the larger part of the enormous gains from labor-saving machinery, the subdual of new lands, and the harnessing of the forces of Nature *have gone not to raise the plane of human life but to sustain more lives.* The peoples into whose lap the gods cast these gifts have chosen to triple or even quadruple themselves within a century. How unfair, then, to rail at Invention or Material Progress as a cheat! It is as if in winter you should build a fire in your chilly cabin—neglecting, however, to close the door—and then complain because you are not warmed! Undertaking to lift to a higher level of comfort and ease a mankind with no more

foresight than to double its numbers in a lifetime is like undertaking to warm all outdoors. The fruits of any conceivable amount of applied science and technical advance can be absorbed without much betterment of human life if man is so foolish as to take out his marvelous good fortune chiefly in feeding endless millions from an inexhaustible font.

CHAPTER IX

PROSPECTS OF AUGMENTING THE FOOD SUPPLY

ON the eve of the World War, although the population of Europe was two and one half times what it had been in 1800, the bulk of the people were better nourished and had life easier. For one thing, after centuries of stagnation in agricultural technique, there had been a revolution in farm methods, beginning in England well back in the eighteenth century and on the Continent in the early part of the nineteenth century. Thanks to the abandonment of the age-old three-field system in favor of crop rotation, a fifth was added to the crop-bearing area. Agricultural chemistry and the liberal use of chemical fertilizers then added a half to the acre yield. At the same time rail and steam permitted the great stretches of fat dark soil in Hungary, Rumania, and South Russia to pour bread grains into the markets of Western Europe. Finally, great virgin tracts on the world's rim were brought under the plow, the invention of ingenious farm machinery multiplied by many fold the farmers' power over their soil, while steam hurried the surplus produce from these new areas to the lean larders of the Old World.

It would be rash, however, to assume that such exploits in food-winning can be duplicated again and again. Rather should they be looked on as gifts of the gods, as buried treasure stumbled on. Where, for one thing, is the trans-

port agency which will be as great an advance over present means of carriage as the locomotive was over the horse, or steam over sail? Where is our century—or the next—to find its Mississippi Valley, Far West, Canada, Argentina, Australia, New Zealand, to fill with sleek herds and green fields? The soil expert Marbut¹ concludes, "It is evident that the future contains lurking within it no possibility of such an increase in production as has taken place during the last half century through the utilization on a large scale, for the first time in the history of the world, of the black soils of the world."

In the eloquent words of my colleague Professor D. D. Lescohier:²

The nineteenth century saw the agricultural exploitation of the world. On every continent and in the islands of the seas, the European portion of the white race has sunk its plough on prairie and hill, upon the mountain-side and in the valley. Agriculture has been pushed to the edge of the Arctic snows, until Greenland, Alaska, and Siberia are yielding to the white man's hand and seed. The white farmer has gone up the Amazon; struck inward from east and west, south and north, toward the heart of Africa; opened up the semi-arid interior of Australia; even penetrated the Orient. He has developed most of South America. Nor have the colored races been idle. The native people of Asia, Africa, and South America are producing more food and raw materials than ever before in history. Throughout the world, hundreds of millions of acres, formerly non-cultivable, have been reclaimed by irrigation, drainage, and fertilization.

¹ C. F. Marbut, "The Rise, Decline and Revival of Malthusianism in Relation to Geography and Character of Soils," "Annals of the Association of American Geographers," Vol. XV, March, 1925.

² "Population Problems in the United States and Canada," edited by Dr. L. I. Dublin, 1926, p. 79.

Never again will mankind have opportunity to enlarge farm acreage by adding areas like the great plains of Central North America; the rolling, fertile, watered forest regions east of the Mississippi; and the portions of South America, Africa, and Australasia which were put under the plough in the nineteenth century. From now on, extension of crop acreage must come through irrigation of semi-deserts, drainage of swamps, reclamation of cut-over lands, conquest of tropic forests, swamps, and jungles, and the ploughing-up of pasture.

UNTAPPED RESOURCES OF THE TEMPERATE ZONE. Outside the Tropics the areas most promising for the future expansion of food-growing are the United States, Canada, Siberia, Argentina, and Australia.

Close studies of the untilled parts of the United States by the U. S. Department of Agriculture show that about three hundred million acres, or a little less than one sixth of the total land area of the country, might be reclaimed by irrigating, draining, or clearing, costly processes, be it noted, which do not "pay" at present prices of farm produce. Thus might be nourished 60 millions of people in addition to the 125 millions who are now fed by American agriculture. At present yields per acre "the arable land of the United States, present and potential, is capable of providing the food and fibres for about 185 millions of people having the same per capita consumption as at present." Many among us may live to see so many inhabit the United States.

If we take the production of wheat, the white man's "staff of life," as an index of food-growing possibilities, Canada has great promise. Even now she exports a third of all the wheat which enters international trade. The experts figure that Canada is capable of doubling, even trebling, her present yield; of growing, in fact, more wheat than is now produced in all North America.

As to Siberia Mr. O. E. Baker ³ of the U. S. Department of Agriculture records the judgment:

Western Siberia and the Steppes to the South constitute the largest area in the world of virgin land available for wheat. If 30 per cent of the 500,000 square miles physically available for wheat were devoted to this crop, and the yields per acre were increased to the present average in the United States (15 bushels), Asiatic Russia would produce over 1400 million bushels of wheat. The average production before the War was only 11 per cent of this amount.

Baker estimates that New Zealand is capable of producing three times as much wheat as now, Australia four times as much. However, it is well to remember that Australia like Argentina has a capricious climate with frequent droughts, so that the hopes of the farmer are more often blighted than in the North Temperate Zone. Australia has gone heavily into irrigation projects during the last fifteen years, with results which up to the present have been very disappointing. Under the touch of cold facts the boomer's dream of a future one hundred million inhabitants shrinks to the prospect that Australia will accommodate about thirty millions on the present standard. Really the food-producing potency of the South Temperate Zone should be compared with the agricultural possibilities of the semi-arid parts of the United States, rather than with those of the country as a whole.

Baker estimates that the world's wheat production *could* be tripled in a century, but on terms that are hard. There must be more capital applied per acre, greater use of commercial fertilizers, a great diffusion of agricultural knowledge and skill, a smaller consumption of meat, and a rise in the price of farm products relatively to that of

³ "The Potential Supply of Wheat," "Economic Geography," Vol. I, No. 1, March, 1925.

other products. "The tendency toward diminishing returns will become more and more evident as the margin of wheat production is pushed farther and farther back into the cold, the wet, the dry, the hilly, the stony and sandy lands of the world."

THE UNUTILIZED TROPICS. The main reservoir of idle rich soil is the Tropics, the world's last food frontier. In the tropical and subtropical countries lies half the world's stock of land fit for the plow, though less than one fourth of it is tilled at present. The Torrid Zone has about three times as much untilled arable land as remains unused in the Temperate Zones. It is predicted that as the great forests are cleared and the swamps plowed the world's larder will appear.

Guesses as to the agricultural future of these hot lands make racy reading. Letting his fancy rove far ahead, the German geographer Penck predicts for Brazil alone a population equal to two thirds of present mankind. As for Africa, most tropical of all the grand divisions, he foresees it feeding more of the globe's future population (eight billions) than Eurasia and 30 per cent more than the entire human family to-day.

On the other hand, soil experts of the United States Department of Agriculture, after studying the soils of the Amazon basin, throw cold water on such hopes.⁴

Timberlands have been conquered by man always at relatively slow rates, and especially is this true of such regions in the tropics. Light-colored soils developed under the leaching effect of a high rainfall, and especially of water that has become warm by the time it begins its percolation through the soil, have never been able, without the application of manures in some form, to

⁴ C. F. Marbut and C. B. Manifold, "The Soils of the Amazon Basin in Relation to Agricultural Possibilities," "Geographical Review," July, 1926.

produce good or profitable yields for more than a few years after they have been brought under cultivation.

The Amazon region cannot produce the things which the world consumes in largest quantities and which require large areas of land for their cultivation, such as wheat and high-grade livestock products. And those products which it can produce in large quantity will inevitably meet with vigorous competition such that the rate of production increase will be inevitably slow.

Finally, even if these conditions were other than they are, it seems probable that, except through an economic revolution of a character wholly unknown and unforeseen, the development of this region has been delayed beyond the critical period in the history of the world. It would seem as if world conditions were not likely again to favor such rapid developments as took place in the United States, Russia, and Argentina in the end of the nineteenth century. Their development was only partly due to their soil and climatic conditions, highly favorable though they were; the other factor consisted in the rapid rate at which European and American industrial development was taking place and the tremendously rapid increase of a population that did not produce its own food. Existing conditions or those likely to exist for a considerable time in the future do not indicate the probability of any such rapid relative increase in the food-consuming but not food-producing population of the world as took place during the latter half of the nineteenth century.

It should be noted, too, that less and less are the tropical populations living on what they raise. British ships bring flour and fish to Kingston in exchange for the products of the Jamaican plantations. The Cubans' dependence on imported food is relatively as great as that of the British. More and more we are feeding the Filipinos in order that we may have their sugar, hemp, copra, coconuts, tobacco, and sisal. The Javanese of to-day, Huntington points out, "do not provide the rest of the world with any more meat, grain, vegetables and other staple foods

than did one-seventh as many a century ago." "Nearly a billion pounds of rice—about 150 pounds for every family—have to be imported in order to permit the Dutch and the rest of us to have enough sugar, rubber, copra, tobacco, tea, coffee, tapioca, pepper and quinine."

In view of these facts, how about the feeding of the "many hundreds of millions of human beings" who, we are told, will populate still-savage Sumatra, Borneo, and New Guinea after Java is filled to her saturation point of fifty millions?

CAN THE LIGHT RACES PEOPLE THE TROPICS? Even if the wet Tropics drip with fatness, who is going to wrest from them their potential contribution to the world's breakfast table? Their present sparse population of benighted Indians and negroes debilitated by sleeping-sickness, malaria, hookworm, and yaws? Unlikely. Or was General W. C. Gorgas, the sanitarian of the Panama Canal Zone, right when he prophesied in 1915, "When the great valleys of the Amazon and the Congo are occupied by a white population, more food will be produced in these regions than is now produced in all the rest of the world."

If the Tropics are made truly fruitful, it will be not by their present inhabitants, but by races now living in the Temperate Zone. Of these the whites are at present best fitted for the job; but can the whites live, work, and perpetuate themselves in the moist Tropics while maintaining a civilization not inferior to that of their homeland? Science may extirpate the infectious diseases of the Tropics, but not the debilitating effects of heat and humidity upon the unpigmented whites. If the white man cannot work there in the sun without becoming neurasthenic, nor insure the vigor of his children save by sending them back home to grow up (as do the British in India), then the

prospect for a great white population in the wet Tropics is not bright. Here is a question science has not yet settled.

"POLAR PASTURES." The Polar explorer Stefansson has called attention to an immense unused food resource in quite another quarter. In the subarctic regions, beyond the limit of agriculture and cattle raising, lie in Northern Europe, Asia, and America grass lands equal to one and a half times the entire United States. Grazed by reindeer and musk-ox, these, he thinks, could produce as much food per acre as the wild lands of Texas and Australia.

A quarter of a century ago the United States government brought into Alaska 1280 Siberian reindeer, and by 1923 the number of their progeny had reached 300,000. The U. S. Biological Survey estimates that by 1940 there will be between two and four million reindeer in Alaska, yielding annually between 50,000 and 100,000 tons of meat. In view of the steady encroachment of farming upon stock-raising in the United States, it may be that for a while our salvation from the vegetarianism of the Orient will be the meat crop from the Polar pastures.

OCEAN FARMING. Another possible reservoir of human food is the sea. Some enthusiasts would have us believe that eventually we shall harvest as much food from an acre of ocean as now we do from an acre of land; and 71 per cent of the surface of the globe is sea.

Professor J. Russell Smith points out ⁵ that "the people of the West Indies have eaten the dried fish of Labrador and Norway largely because Labrador and Norway had a cool climate in which fish would not spoil the same afternoon it was caught. Largely for this reason the teeming fish of tropic waters have busily eaten each other up almost undisturbed by man. Now the steam-driven fishing vessel with its engines and ammonia pipes can dump the

⁵ "The World's Food Resources," p. 349.

fish into an ice room, or into freezing-tanks and imbed them in a mass of solid ice in a few hours, to be kept for a week or a month, or a year, and sold in this continent or the next as market conditions dictate. There is no reason now why fish that sport around the shores of Florida, or Hawaii, or far Fiji may not be imbedded in ice blocks, loaded into holds of European steamers at Havana, Honolulu or any South Sea bight for consumption three months later in Belgium, Italy or Bulgaria, or if the markets do not require them in fresh condition they can with the aid of ice be carried from the reefs where they are caught to some tropic canning factory. . . ."

THE MANUFACTURE OF FOODS FROM EARTH AND AIR. Even more gaudy is the dream of the direct building up of human foods by the chemist without a "thank you" to any plant or animal. We are assured that "the chemist has now up his sleeve processes for making fats from almost any kind of carbonaceous material; coal, lignite, petroleum, wood tar, sawdust. . . . He can not only make the scores of fats and oils that are found readymade in plants and animals, but he can make hundreds of others that nature never thought of." ⁶ Sugar, too, can be built up in the laboratory, but only by an enormous expenditure of electrical energy, and it is not fit to eat.

For mankind to multiply carelessly, counting on the early arrival of the synthetic production of foods on a grand scale, would be a pure gamble in human lives.

THE CAPACITY POPULATION OF OUR GLOBE. Estimates of how many will people the world when it is full depend on what assumptions one has the boldness to make. Well says Sir G. H. Knibbs: ⁷

⁶ E. E. Slosson, "Food from Shale," "Scientific Monthly," Vol. 21, pp. 106-107, 1925.

⁷ "Scientia," Vol. 38, p. 334, November, 1925.

The different estimates of the possibility of the world-population must depend partly upon the extension of man's knowledge of Nature and partly upon his social, economic and political organization. Assuming that he retains his present attitude as to standard of living, and retains to the full his national prejudices and egoisms, it is doubtful whether he will ever reach the 5000 million limit. If he better coördinates his efforts so as to involve less expense in non-productive effort, then possibly the advance of Science may enable the 7000 million limit to be reached. If he goes further and raises the level of intelligence and culture sensibly to the one plane, it seems possible that the friendly study of universal economic conditions and of the adjustment of all territorial and economic relations, together with the advances made through systematized knowledge, would perhaps make a population of 9000 million possible, and although this leaves only a small area available to each individual, it may perhaps be attained. One might go even further and say that, disregarding great natural vicissitudes which may of course even wipe out the whole human race, the ultimate limit may be as high as 11,000 millions, but such a limit means very slow attainment and very highly perfected adjustments of human affairs—adjustments that involve an immense advance on the present moral development of the human being.

Estimates of capacity population for the globe depend much on the standard of living you assume. Mankind may indeed double in number and redouble if tasty dishes be given up for coarse and ill flavored fare; if flesh disappears from the week-day diet; if groves, orchards, and vineyards become truck patches; if dooryards, playgrounds, commons, and parks are set to growing beans and cabbages; if pet animals go as well as game; if the typical working day is from dawn till dark; if quilted cotton is worn for warmth rather than woollens; if tree slaughter proceeds till mud hut replaces frame house. No doubt, when all luxuries, adornments, and decencies have

been thrown into the hopper for grinding out mere numbers, famine will loom when there has been a single crop failure, and during the growing season the millions of petty cultivators will be tortured by a tragic anxiety as to the weather. With small holdings and more hand labor, school attendance could not be exacted of the farm children after they were old enough to help. So, among people living thickly upon the land, as now in the Orient, ignorance, superstition, and peasantry would finally prevail.

If the splendid latter-day adventure of exploring, settling, and subduing the earth which opened with the discovery of the New World were to end in the same old grind and squeeze, the same old pinching and paring, the same dwarfing and deforming of the human spirit with petty cares and sordid anxieties, one would be ready to join Huxley in welcoming the advent of some "kindly comet" that would "sweep the whole thing away."

THE RACE BETWEEN POPULATION AND VICTUALS. In comparison with the long perspective in which we look back to Crô-Magnon man, the nearness of the time of the complete filling of the globe is startling. We seem to be tobogganing down the slope of diminishing returns toward world saturation. Still, we are by no means scraping the bottom of the flour-bin. There is no Great Hunger lying in wait for us a little way on. On the bread question we can follow the middle of the road, neither alarmist or dreamer. The food supply can be greatly enlarged, no question of that; the doubt is whether it can be made to keep pace with the needs of a recklessly multiplying humanity.

According to the best authorities the world's population is doubling in sixty years, perhaps less. If we take it to be 1900 millions now, then at the gait it is going, making no allowance for further vanquishing of disease, there would

be 3800 millions by the year 1987, 7600 millions by the year 2047, 15,200 millions by the year 2107. But no one dreams that so many can live off this globe unless the chemists find a way to turn stones into bread. Even at a date no farther from us than is the French Revolution, the mouths here would eat all that could be extracted from land and sea by known methods. But will the basins of the Orinoco, the Amazon, the Congo, be farmed so soon? Why, it will take half this "century of grace" to rid these regions of infected insects, to say nothing of clearing the primeval forest and confining the rivers in flood! Even at the quick pace of to-day it will require centuries to put all the land of the globe properly to work.

Were it the question of doubling food production in, say, the next two centuries and again in the following two, the job would not look so hopeless. But to keep up with a humanity that doubles in sixty years . . . !

IF EVENTUALLY, WHY NOT NOW? Humanity grows as a tree grows: each year the growth ring is bigger. On the other hand, as more and more of the globe's neglected resources are brought into play, the extensibleness of food production should decline, just as, the more you have stretched a rubber band, the harder it is to stretch it still further. Imagine mankind as thronging to a vast spread dinner-table which can be extended fast enough to accommodate the 20 million extra guests which now appear every year. But can the table be extended fast enough to seat the yearly 40 million new guests who will seek places 60 years hence? How about 120 years hence when each year 80 million more guests will want seats? Or 180 years hence when 160 million more will present themselves each year?

Astronomers expect our globe to be a fit home for man for millions of years; so we may ask what will be the

plight of our descendants at a date no more distant from us than is Christopher Columbus? Charlemagne? Julius Cæsar? Verily, who takes mankind to board needs an India-rubber globe!

Nature, to be sure, offers her solution—simple, ruthless, effective. When Food can no longer keep up with Population, privation and toil will raise the death-rate, as they have raised it a thousand times in the past, until Life and Death are once more in balance. If posterity recoils from this gloomy prospect, then the voluntary restriction of increase must become general. If it has to come anyhow in two or three generations, what is the point in putting it off until the standard of living of the masses of men has been pared down to the bare necessities? Why wait till there is little left to salvage? If eventually, why not now?

CHAPTER X

THE REALITY OF POPULATION PRESSURE

MUCH stress is laid on the *individual* aspects of large families among the poor: the mother worn out or dead before her time from excessive child-bearing; the father a slave to the needs of his flock; the children neglected, ill nourished, ill clad, ill housed, unschooled, put too soon to work. But this is by no means all that is to be urged to-day against the unlimited family. Even if, without unduly burdening itself, the ordinary couple should properly rear and educate a dozen, the ultimate social results would be disastrous now that losses by death are so small.

A big vital happy family if of course a feast for the eyes. Moreover it blesses society and the race if the *superior* couple without hurting themselves bring up well ten children. But in so far as the big family is general, so that population overtakes and runs past production, life will become harder, the outlook darker, the mood grayer. Poverty will spread. Children will be set to work too early. Play and recreation will fade out of the current scheme of life. The masses will be worse clad and housed. More mothers will be worn out early and more children left orphaned.

In other words, the effect of big families on the welfare of their members is one thing; their bearing on *social* welfare is another. Too much attention has been given to the former, too little to the latter. The student of society finds

that even if the children of big families should come easily and rear one another, nevertheless society will be penalized in the end. *For the rate of population increase is a master factor in determining the economic plane upon which the masses wage their battle for life.*

WHAT POPULATION PRESSURE IS. If not counterbalanced by a heavy mortality, reckless multiplication alters for the worse the man-land ratio and results eventually in population pressure (*alias* overpopulation), i. e., *difficulty experienced in normal times by the industrious and frugal in obtaining the necessities of life.* There are, to be sure, many cases of temporary general destitution which do not spring from population pressure. A bountiful, sparsely settled region surely has no excess of inhabitants; yet if no rain fell in three years, as happened lately in certain thickly settled parts of China, the settlers might starve. Widespread want resulting from bad weather, flood, earthquake, insect pests, civil disorders, or the devastation of war, is no sign of overpopulation; nor is the distress of the lazy, the wasteful, the vicious, the defective, the invalid, the crippled, the aged. But when regularly many sober, able-bodied, hard-working persons, who are neither skinned nor jobless, are hard put to it to maintain their families, then the existence of population pressure is beyond question.

You do not exorcise population pressure by showing that if farmers were more knowing or skilful there might be abundance for all. As well prove that a saturated liquid is not saturated by showing how much more might be held in solution in case the saturation point of the liquid were raised, say, by heating. On this principle we should *never* meet with *true* population pressure; for no people is farming so well that agricultural experts cannot demonstrate how, by applying more capital here or more scien-

tific knowledge there, the yield of the soil could be substantially increased. The chronic indigence which proclaims the presence of population pressure goes, of course, with the *actual* state of the arts and is not to be waved aside airily by imagining the adoption of some ideal technique of production.

DOES A PEOPLE EVER PROPAGATE ITSELF INTO MISERY? Some thinkers have indignantly denied that population ever expands to such a point as to produce pressure. Fifty years ago in his "Progress and Poverty," Henry George, in support of his contention that private property in land is the sole cause of persistent mass poverty, made a slashing onslaught on Malthus which many like to think disposed of him once and for all:

Malthus' review of what he calls the positive checks to population is simply the showing that the results which he attributes to overpopulation actually arise from other causes. Of all the cases cited, and pretty much the whole globe is passed over in the survey, in which vice and misery check increase by limiting marriages or shortening the term of human life, there is not a single case in which the vice and misery can be traced to an actual increase in the number of mouths over the power of the accompanying hands to feed them; but in every case the vice and misery are shown to spring from either unsocial ignorance and rapacity, or from bad government, unjust laws or destructive warfare.

Nor what Malthus failed to show has anyone since him shown. The globe may be surveyed and history may be reviewed in vain for any instance of a considerable country in which poverty and want can be fairly attributed to the pressure of an increasing population. Whatever be the possible dangers involved in the power of human increase, they have never yet appeared. Whatever may sometime be, this never yet has been the evil that has afflicted mankind.¹

¹ Book II, Chap. II.

At the time Mr. George penned these lines, the conquest of the germ diseases had not begun. The death-rate of even the most advanced peoples ranged between 21 and 26 per thousand. Had he lived, as we have, to see these rates cut in two, he might have felt obliged to change his position.

Mr. George went on to assert, “. . . in what we know of the world's history, decadence of population is as common as increase. Whether the aggregate population of the earth is now greater than at any previous epoch is a speculation which can only deal with guesses.” Since he wrote it has been established that not only has the population of the globe grown prodigiously since the Industrial Revolution, but that at present it is increasing as never before.

His argument “. . . that nowhere can want be properly attributed to the pressure of population against the power to procure subsistence in the then existing degree of human knowledge; that everywhere the vice and misery attributed to overpopulation can be traced to the warfare, tyranny, and oppression which prevent knowledge from being utilized and deny the security essential to production,” underpins the revolutionary dogma that, given good soil and climate, the chronic poverty of the diligent is due always to some form of exploitation. It absolves such poor from all responsibility for their penury and heaps the blame upon social institutions such as private ownership of land (Henry George) or of the means of production (Karl Marx).

RIVAL EXPLANATIONS OF MASS POVERTY. If this be so we have no right to infer population pressure from the dire straits of the Irish in 1845, when 8,295,061—near twice the present population—were struggling to maintain themselves on the Green Isle; for were they not remitting abroad to absentee landlords a fifth of the produce

of their soil? Then there is Java, pullulating Java, where one third the area of California is made to feed *ten times* California's population, where people are *fifty times* as thick upon the land as are the farmers of Iowa.² Is Javanese poverty not fruit of *exploitation* rather than of overpopulation, seeing that the Javanese yield a large revenue to Dutch capitalists? Nor is Bengal in point, where human beings are so thick upon the land that, on the average, there are but two and a quarter acres to one tiller of the soil. For regularly there stand between cultivator and landowner a long chain of parasites, including in some cases up to ten or fifteen persons.

Is there, indeed, any force in citing Porto Rico, where, thanks to our life-saving, human beings have multiplied until in his last report Governor Towner declares, "We have reached the limit, beyond which we cannot go without an increasing proportion of our population continuing unemployed"? For the great export industries of this island are yielding a very considerable revenue to absentee American capitalists. As for China, where it is not uncommon for 2000-2500 people to wrest all their sustenance from a square mile of land, who knows how many vultures may be eating the poor man's liver there? The fact is, in every case of chronic mass poverty, concentrated ownership of the means of production gives an opening for blaming the indigence of the workers upon landlord or capitalist rapacity. *Never, it would seem, can the existence of genuine population pressure be proven until we find it in a society in which labor gets the whole of its product.*

And there have been no such societies!

OVERPOPULATION AND CLASS EXPLOITATION ARE INDEPENDENT CAUSES OF MASS-POVERTY. I loathe exploitation

² See Ellsworth Huntington, "West of the Pacific," 1925, p. 248.

and am well aware that the privileged classes everywhere have welcomed Malthus's doctrine because it seemed to relieve them of all responsibility for the wretched state of the toilers. But social reformers are as rash in charging all instances of mass poverty to exploitation as are the privileged in charging them all to reckless multiplication. These two factors of impoverishment should be distinguished, the one from the other. I shall not appraise here the causes championed respectively by the single-taxers and the socialists. I am examining *population*, quite a different matter. I contend that *population tendency* is one thing; *the system regulating the distribution of wealth* is another thing. Each reacts upon the other, but at bottom the two are distinct and should be considered apart.

Imagine a contemporary society of the modern type checked in growth at the ten-million figure by the ravages of misery upon its ill paid masses. Let one million, constituting the capitalist class, extract an income which could maintain three millions. If now, without loss of productivity, the landed estates be divided among the peasants and the mills "socialized," so that the capitalists have to go to work, will the population problem of this society be solved for all time? No, it will only lie dormant until the population has expanded to thirteen millions. Then, the economic benefit from the wiping out of "exploitation" having been exhausted, mass misery will recur.³ In other words neither agrarianism, communism, nor any other reform of the distribution of wealth cures

³ It may be that just this has happened in Russia. In the last three years 3,000,000 peasants have migrated into the towns, although the Ministry of Labor reports a million trade-union members out of employment. Peasant fertility is swallowing the gains from dividing the estates among the peasants. The death-rate has been reduced a quarter, and the population grows at a rate that will double it in thirty-seven years.

chronic population pressure. For that the sole remedy now in sight is the spread of voluntary parenthood.

THE TEST OF POPULATION TENDENCY. Whether population pressure will appear in a people depends upon *population tendency*, and there is a way of gaging it irrespective of the amount of toll taken from workers by proprietors. While everywhere, save in Soviet Russia, the owners of the means of production absorb no small part of the product, the behavior of working populations under like economic circumstances is by no means the same. One peasantry or proletariat multiplies thoughtlessly until want brings its death-rate up abreast of its birth-rate and its expansion ceases. Another with more foresight accommodates its birth-rate to its death-rate before arriving at a state of actual want. Moreover a moment's reflection will show that this contrast in behavior might persist even if both peoples came under communism.

If, without suffering impairment of its production, a fore-looking prudent people were freed of all dues to land-owners and capitalists, it would not use up all this windfall in adding to its numbers; it would devote a large part of it to raising its standard of living, gratifying its many unappeased wants. On the other hand, if a thoughtlessly prolific people which had become stalled by the resistance which misery offers to survival were, on the same terms, abruptly relieved of all charges for the use of the land or capital it worked with, the workers' better economic state would quickly be reflected in a fall of the death-rate. Population would begin to expand again and, unless the new social order brought into play influences elevating the popular standard of living, growth would continue until all the "slack" had been taken up. Then life would be as difficult as ever and the net economic result of having

abolished "social parasitism" would be simply more people living at the old level.

The truth is, *at a given stage of cultural development a people has its characteristic growth tendency, which it will exhibit under varying degrees of exploitation, or even in the utter absence of exploitation.*

CHAPTER XI

THE CHARACTERISTIC SIGNS OF POPULATION PRESSURE

UNLIKE the pressure of the atmosphere or of a confined gas, population pressure cannot be measured upon one simple scale, for it manifests itself in various ways and enters into many concrete forms and situations. However, there are certain symptoms from which its presence may be inferred. Among them are:

1. *Laborious earth sculpture in order to extend the food-growing area.* In the high valley of the Urubamba River in Peru, the center of the ancient Incan agriculture, the valley floor, from half a mile to a mile in width, has been molded into beautiful terraces, each of some acres in extent and from six to nine feet above the next lower one. The making of these regular terraces was a work for Titans; yet it was completed before the Spaniard appeared on the scene.

Scarcely less wonderful are the narrow terraces, the *andenes*, which make a staircase to the height of a thousand or even fifteen hundred feet up the slopes in places where water from the snow-fields can be led down from terrace to terrace. The walls of the *andenes* are of rough-fitted stones and are from four to fifteen feet high. At times you find a ten-foot wall built in order to support a strip of earth *not over a yard wide*. No doubt in many cases the earth was brought in baskets from pockets among the distant rocks. Surely nowhere on the globe has more sweat been paid for a foot of soil.

The earth sculpture of this valley presupposes three conditions. First, *a population multiplying at a natural rate*. Even to-day among the Kechuas reproduction begins soon after puberty, "proving" precedes marriage, and the unmarried mother of a couple of boys is a particularly desirable bride because boys are an asset. Second, *lack of opportunity to expand*. The Kechuas must have been bottled up between the warlike Aymarás to the south and the savage wielders of the poisoned dart to the north of them in the jungles along the lower Urubamba. Third, *a long period of occupancy*. Only the toil of several generations can account for such prodigies of earthwork. So one imagines a people of few wants, unwarlike, unadventurous, home-loving, as industrious as the denizens of an ant-hill, who, clad in two garments, bore earth upon their backs, dressed stones, reared walls, and opened ditches, content if the day's work brought a fistful of beans or a double handful of parched corn.¹

"In an overpopulated land," wrote Yeh Shih seven centuries ago, "the people dig the mountains and dam the sea, picking out any profit which is left." How true of his ant-hill world! In mountainous China, in order to win new plots for tillage, human sweat has been poured out like water. Clear to the top the foot-hills have been carved into terraced fields. On a single slope I counted forty-seven such fields running up like the steps of a Brobdingnagian staircase.

Rice will thrive only under a thin sheet of water. A rice field must, therefore, be level, and inclosed by a low dike. Where the climate is friendly, the amount of labor that will be spent in digging a slope into rice fields and carrying a stream to them is beyond belief. In one case I noticed how a deep notched, rocky ravine in the flank of

¹ See the author's "South of Panama," 1915, p. 77.

a rugged mountain had been completely transformed. The peasants had brought down countless basketfuls of soil from certain pockets at the foot of the cliffs. With this they had filled the bottom of the V, floated it into a series of levels, banked them, set them out with rice, and led the water over them. So, instead of a barren gulch, there is a staircase of curving fields, perhaps four rods wide and differing in level by the height of a man. I have also seen the sides of a gully in which a child could not stand undiscovered cut into shelves for making a string of rice plots no larger than a table-cloth, irrigated by a trickle no bigger than a baby's finger.²

Professor F. H. King's "Farmers of Forty Centuries," 1911, contains passages along the same lines.

Fields which had matured two crops of rice during the long summer, had been laboriously, and largely by hand labor, thrown into strong ridges . . . to permit still a third winter crop of some vegetables.³

The total area of fields graded practically to a water level in Japan aggregates 11,000 square miles . . . Such enormous field erosion as is tolerated at the present time in our southern and South Atlantic states is permitted nowhere in the Far East, so far as we observed, not even where the topography is much steeper. The tea orchards, as we saw them on the steeper slopes, not level-terraced, are often heavily mulched with straw which makes erosion, even by heavy rains, impossible. . . . It is a *multum in parvo* treatment which characterizes so many of the practices of these people, which have crystallized from twenty centuries of high tension experience.⁴

In the Shantung province the surface of the field may be thrown into broad leveled lands, separated and bounded by

² These and other passages as to the Chinese are drawn from the chapter of my "The Changing Chinese," 1911, entitled, "The Struggle for Existence in China."

³ Page 73.

⁴ Page 112.

deep and wide trenches into which the excess water of very heavy rains may collect. . . .⁵

There is periodic exchange of soil between mulberry orchards and the rice fields, their experience being that soil long used in the mulberry orchards improves the rice, while soil from the rice fields is very helpful when applied to the mulberry orchards.⁶

2. *Completeness of land utilization.* In China the earth is utilized as perhaps it never has been elsewhere. Little land lies waste in highways. Throughout the rice zone the roads are mere foot-paths, one to three feet wide, yet the greedy farmers nibble away at the road from both sides until the undermined paving-stones tilt and sink dismally into the paddy-fields. Pasture or meadow there is none, for land is too precious to be used for growing food for animals. Even on the boulder-strewn steeps there is no grazing save for goats; for where a cow can crop herbage a man can grow a hill of corn. The cows and the water-buffaloes never taste grass except when they are taken out on a tether by an old granny and allowed to browse by the roadside and the ditches, or along the terraces of the rice fields.

The traveler who, in dismay at stories of the dirt, vermin, and stenches of native inns, plans to camp in the cleanly open, is incredulous when he is told that there is no room to pitch a tent. Yet such is the case in two thirds of China. He will find no roadsides, no commons, no waste land, no pasture, no groves nor orchards, not even a dooryard or a cow-pen. Save the threshing-floor, every outdoor spot fit to spread a blanket on is growing something.

3. *Extreme utilization and economy of materials.* In China no natural resource is too trifling to be turned to

⁵ Page 116.

⁶ Page 173.

account by a teeming population. The sea is strained for edible plunder. Seaweed and kelp have a place in the larder. Great quantities of shell-fish no bigger than one's finger-nail are opened and made to yield a food that finds its way far inland. The fungus that springs up in the grass after a rain is eaten. Fried sweet potato vines furnish the poor man's table. The roadside ditches are bailed out for the sake of fingerlings. No weed nor stalk escapes the bamboo rake of the autumnal fuel-gatherer. The sickle reaps the grain close to the ground, for straw and chaff are needed to burn under the rice kettle. The leaves of the trees are a crop to be carefully gathered. One never sees a rotting stump or a moldering log. Bundles of brush carried miles on a human back heat the brick kiln and the potter's furnace.

Silk-worms are eaten after the cocoon has been unwound from them. After their work is done, horses, mules, donkeys, and camels become butcher's meat. The cow or pig that has died a natural death is not disdained. Though the farmer thriftily combs his harvest field, every foot of the short stubble is gone over again by poor women and children, who are content if in a day's gleaning they can gather a handful of wheat-heads to keep them alive the morrow. On the Hong-Kong waterfront the path of the coolies carrying produce between warehouse and junk is lined with tattered women, most of them with a baby on the back. Where bags of beans or rice are in transit a dozen wait with basket and brush to sweep up the grains that drop from the sacks. Others run by the bearer, if his sack leaks a little, to catch the kernels as they fall. Where sugar is being unloaded, a mob of gleaners swarm upon the lighter the moment the last sack leaves and eagerly scrape from the gang-plank and the deck the sugar mixed with dirt that for two hours has been trampled into a

muck by the bare feet of two score coolies trotting back and forth across a dusty road!

It is common, when walking through the canal country, to come upon groups of gleaners busy in the bottoms of the shallow agricultural canals, gathering anything which may serve as food, even including small bulbs or the fleshy roots of edible aquatic plants.⁷

We came upon six women in a field of wheat, gleaning the single heads which had prematurely ripened and broken over upon the ground between the rows soon to be harvested. . . . It was nearly noon, yet not one of them had collected more straws than she could readily grasp in one hand.⁸

When grass is to be cut in India, the man takes hold of a handful of grass in the left hand and pushes the cutting tool a little under the surface of the ground to get all he can, root and all, so that a freshly cut hayfield has no stubble in sight, but looks as though it has been harrowed.⁹

4. *Exhausting labor for a pittance.* Haunted by the fear of starving, the poor Chinese spend themselves recklessly for the sake of a wage. In certain occupations men are literally killing themselves. The treadmill coolies who propel the stern-wheelers on the West River admittedly shorten their lives. Nearly all the lumber used in China is hand-sawed, and the sawyers are exhausted early. The planers of boards, the marble polishers, the brass filers, the cotton fluffers, the treaders who work the big rice-polishing trestles, are building their coffins. Physicians agree that carrying coolies rarely live beyond forty-five or fifty years. The term of a chair-bearer is eight years, of a rickshaw runner four years; for the rest of his life he is an invalid. In Canton, city of a million, without a wheel or a beast of burden, even the careless eye marks in the street

⁷ King, work cited, p. 175.

⁸ King, *ibid.*, p. 340.

⁹ Sam Higginbottom, "The Gospel and the Plow," 1921, p. 15.

porters the plain signs of overstrain; faces pale and haggard, with the drawn, flat look of utter exhaustion; eyes pain-pinched, or astare and unseeing with supreme effort; jaw sagging and mouth open from weariness. The dog-trot, the whistling breath, the clenched teeth, the streaming face, of those under a burden of from one to two hundredweight that *must* be borne, are as eloquent of ebbing life as a jetting artery. At rest the porter often leans or droops with a corpse-like sag that betrays utter depletion of vital energy. In a few years the face becomes a wrinkled, pain-stiffened mask; the veins of the upper legs stand out like great cords; a frightful net of varicose veins blemishes the calf; lumps appear at the back of the neck or down the spine; and the shoulders are covered with thick pads of callus under a livid skin. Inevitably the children of the people are drawn into these cogs at the age of ten or twelve, and not one boy in eight can be spared till he has learned to read.

Now turn to the other end of the world and mark what the expert of the U. S. Department of Agriculture observes in Italy, where population pressure is increasing because neither church nor state will allow the masses to be told how to limit the size of the family.

On this low level, the peasant in Italy is essentially the hoe-man. He spades considerable areas, he digs the vineyards with a heavy mattock. If he plows, he plows by hand with the long-beamed primitive plow, driving a small horse, a donkey, draft cows, or white oxen where he works on a large farm. The peasant cuts grass with a hook sickle. He rakes by hand. He carries heavy loads on his back. He pulls at the cart, if he has one, to aid his small draft beast. Six men may be seen spading a field in lieu of plowing. A man may be working an irrigation pump instead of the horse, donkey or ox. A man may carry pails upon pails of water, and cup in hand, splash water out upon his truck crops.

The peasant woman, barefooted, hoes, breaks hard lumpy ground with the mattock. She cuts grass, loads hay, weeds truck crops on her knees, weeds all the wheat fields, long hours, rain or shine, always walking, carrying heavy loads on her head or back. She washes the household linen by hand at streams, rivers, ponds, in cold water.

The brutality of lifting, pulling, carrying, walking, back bent, eyes to the earth, condemns the peasant to peasantry—until some social miracle happens to break the chain of benumbing events in his life.¹⁰

5. *Low standard of living.* From an unpublished doctoral dissertation entitled "Population Pressure in China" by Professor C. G. Dittmer of New York University, for five years professor of economics in the Tsing Hua College, Peking, I am permitted to extract the following:

Once I took a boat trip down the Lan river from Jehol to the coast. Our boatmen worked very hard but they did it on two meals per day. In the middle of the morning and in the middle of the afternoon they stopped the boat and boiled up a huge caldron of millet gruel. They consumed incomprehensible amounts of this tasteless unseasoned stuff, and helped it down with plenty of hot water and an occasional nibble at a bit of salted cabbage or turnip. They had to be fed for the work they were doing. I hate to think what the non-workers were eating at their homes back in the villages.

One of the most distressing sights I have ever witnessed takes place regularly every morning at the side gate of our college near Peking. At that time the garbage men have collected their cart loads of refuse from behind the various kitchens, foreign and Chinese, and are ready to dump them into the stream outside the wall. Already there has collected a group of twenty to fifty paupers and when the gates are swung open they have gathered

¹⁰ "Some Observations on Farm Life in Europe." Paper read before the Rural Section of the American Sociological Society, St. Louis, December 29, 1926, by C. J. Galpin, U. S. Department of Agriculture, Bureau of Agricultural Economics.

on the banks of the stream and with their bodies form a wall which keeps the stuff from falling into the water. Each has a basket and frantically rakes it full. Then they retire a few paces and sort it over. Withered cabbage leaves, a carrot which the cook would not use, an ancient apple, even potato parings are saved for they all have food value to them, if not to us.

The more fastidious in the surrounding villages have another method of sharing the luxury of the college. After each meal in the dining halls the dishes are carefully scraped into buckets and one enterprising chap slings two buckets from the ends of a carrying stick over his shoulder and peddles the stuff among the surrounding villages at one copper, about a third of a cent, a bowl. Quite a luxury! And a profitable business!

One of the significant questions asked in our questionnaire, but not worked up because of the vagueness of the answers, was this. How many times a year do you eat meat? For the lower income groups the answer was invariably "Never." The one-hundred-dollar-a-year group may enjoy meat once a month. Many taste meat only at New Year's time; some replied, "On holidays." Not one per cent of the families enjoyed it as much as once a week.

. . . The acquisition of clothing, for the most part, is purely a matter of happy accident. I have seen workmen at work stark naked, though this is far from common, and economy was the only motive I could discover. The hundreds of boatmen on the Lan river during the long summer effect this saving. Country roads are filled in summer with naked youngsters whose families do not allow them to run thus from choice.

A thin cotton coat and trousers is all that is necessary in summer and the coat is superfluous. During this season they are comfortable but in winter they suffer. The same cotton garments are worn but thickly quilted with cotton. Amongst the poorest the wadding is taken out during summer and pawned to make a loan till it shall be needed in winter again. Some have sheep skin coats but these are luxuries.

Look now at the lot of the East Indian. In his "The

Gospel and the Plow," Sam Higginbottom, director of a large missionary estate near Allahabad, says:

The family of the Indian tenant farmer usually plans for one meal a day. During part of the year this meal is often uncooked and consists of millet soaked in cold water, or a pulse parched in hot sand and eaten a grain at a time. When pulse is cooked it forms pigeon pea soup, which is seasoned with spices, red peppers, or chilis. Into this soup are dipped the cakes of unleavened bread which have been cooked over a small fire of dried cowdung. This unleavened bread usually is made from the cheaper grains, since wheat is, as a rule, too expensive for these poor villagers. . . . About one-third of the people of India are living at a rate of about two cents per day or less, are permanently underfed and ill-nourished, are so short of food that they do not get proper growth, and are generally too weak to do a fair day's work.

Or consider the Javanese with three fifths of an acre of cultivated land per rural person, whereas there are thirty-one acres of productive land per person in the farms of Iowa. Says Professor Ellsworth Huntington: ¹¹

In view of the tropical climate, the many crops per year, and the small size of the Javanese, 0.6 of an acre there will feed as many people as about seven acres in Iowa. The remaining twenty-four acres per person in Iowa represents the difference between the standards of living in Java and in the United States. Because the Iowans have the extra acres and also have the energy and the mechanical ability to cultivate them, they buy automobiles, radios and victrolas, they go to college, travel, take magazines, use four or five times as much sugar, and perhaps twenty times as much meat and milk as the Javanese—and they buy all sorts of luxuries. It is only by getting along without an enormous number of things which Americans deem essential that such vast numbers of Javanese can live on their little island.

¹¹ "West of the Pacific," 1926, p. 248.

In Porto Rico¹² the general state of poverty "renders difficult every effort for progress." "Every crop failure or disaster threatens starvation, so narrow is the margin of resources." "The poverty of the mass of the people is shown by the practices of selling food by the cent's worth, of cutting loaves of bread into many penny pieces, and of pricing eggs individually rather than by the dozen."

Apropos of an official estimate of 20,000 homeless children on the island we are informed:

The "family" and the "home" do not exist among the poorer classes of Porto Ricans in the sense in which these terms are used ordinarily. The degree of poverty which prevents a family from having more than one small room, and that virtually without furniture—with perhaps a hammock or a poor bed for the man, no chairs and no other conveniences—makes of the "home" only a room where the family sleeps in a mass on the floor at night. Privacy does not exist. Life is lived on the street, and only a people of unusual kindness and clean instincts could make of the situation one in which sordidness was not the rule.

6. *Difficulty of maintaining existence.* Some of the results of the field researches of Professor Dittmer's students are as follows:¹³

In Wang Tu and adjoining county we found but 956 to the square mile, and this country was more fertile, more prosperous, and nearer the railroad.

In an industrial district where agriculture is supplemented by handicraft weaving we found a density of 2000.

In Shantung, with a crude density of 683 to the square mile, we found densities of 2500, 2700 and 3000.

¹² "Child Welfare in the Insular Possessions of the United States," Part I, "Porto Rico." U. S. Department of Labor, Children's Bureau, No. 127, 1923.

¹³ C. G. Dittmer, "Density of Population and the Standard of Living in North China," "Publications of the American Sociological Society," Vol. XIX, 1925, pp. 196-199.

In Joa Yang county, in an area of 200 square miles, there are 214 villages and a density of population of 1500. . . .

. . . I have come to the conclusion that we may expect in agricultural China, and that is practically all of China, a density, varying with the fertility of the soil and other determining factors of productivity, of anything between 1500 and 2500 to the square mile. We would be quite safe in striking an average of 2000, but even the lowest figure is bad enough. A condition of this sort means farms of between one and two acres per family, and that farm villages are as close together as farmhouses are here in the Middle West. The post-famine studies of Professor Tayler show that one-third of the farms are less than one acre in size, two-thirds are less than two acres, and that only one-tenth of 1 per cent are as large as 160 acres, a very common size in America. . . .

Let us turn to the model group and see what the standard is. They have a yearly income of \$82. They arrived at the end of the year with a deficit of \$1.26. This family is composed of 4.4 individuals of whom 1.6 are children. There have been numerous other children, but most of them have died or disappeared in early infancy. They live in a house of 4.8 rooms which, if other things were equal, would indicate no evidence of crowding. The rent value of the house is \$4.15 per year, and that is all it would be worth in any place. It is a pretty poor sort of a hovel, built about one end and part of the side of a mud-walled courtyard. They have two-thirds of an English acre of land from which they gain practically all of their support. For food they spend \$55.13, which is 67 per cent of their income. They eat meat but once a year, and live on two meals per day. Meat and tea are the only luxuries they have ever tasted, and it is a fact that they have never had what we would call a square meal in their lives. Their clothing costs \$3.09 or some 3.7 per cent of their income. This amount is hardly sufficient to maintain their clothing in proper repair, to say nothing of acquiring new garments. The value of the fuel they consume is \$9.82, but more than half of the amount is gathered from the fields, and the main money expenditure is oil for lighting. It requires a full

day's work to provide a day's fuel for the family. Thus nearly 12 per cent goes for this purpose. For miscellaneous purposes the family spends the magnificent amount of \$3.89. This amounts to 4.7 of their income and has to supply everything aside from the barest necessities of life.

A standard of living like this is the price the inhabitants of North China must pay for one of the most serious conditions of overpopulation on record. It is a bare subsistence standard which is maintained in the face of a tremendous birth-rate only because the death-rate is equally high. There is no evidence that the population of China is increasing at all, and there is every evidence that the standard of living has struck bottom; that a Malthusian balance has been at last attained. . . .

The increasing precariousness of existence of the Indian cultivator flows obviously from his having to wrest his living from a smaller plot. Writes the agricultural expert H. H. Mann after a close study of a village near Poona: ¹⁴ "One of the first results of the conditions brought in by British rule was a gradual increase in the population, and hence . . . a further sub-division and fragmentation of the land." These conditions "were met by the incurring of debts." "These debts now form a crushing load amounting to nearly 12 per cent of the capital value of the village, and the annual charges for them amount to 24.5 per cent of the total profits from land."

7. *Low value set on human life.* "Man is a weed there," said De Quincey of China. It is true that the great number "hanging on to existence by the eyelashes," and dropping into the abyss at a gossamer's touch, cheapens life. "Many men, life cheap," reply the West River watermen when reproached for leaving a sick comrade on a fore-shore to die. Ax and bamboo are retained, and prison reform is halted by the consideration that, unless the way of

¹⁴ "Life and Labour in a Deccan Village," 1917, p. 151.

the transgressor is made flinty, there will be people committing crime for the bare sake of prison fare. For the same reason Chinese officials show sometimes no enthusiasm for the suppression of epidemics. After all, it is better to die quickly by the plague than slowly by starvation; and, as things are, if fewer Chinese perish by disease, more will die of famine.

With regard to the social effects of the struggle for existence in China Professor John Dewey remarks:

Where there is a complete manifestation of the Malthusian theory of population, friendliness develops with great difficulty to the point of active effort to relieve suffering; where further increase of population means increase in severity of the struggle for subsistence, aggressive benevolence is not likely to assume large proportions. On the contrary, when the cutting off of thousands by plague, or flood, or famine, means more air to breathe and more land to cultivate for those who remain, Stoic apathy is not hard to attain.

8. *Dependence of the individual upon his group.* The son of Han dares not cut himself off from his family, his clan, or his gild, for they throw him the life-line by which he can pull himself up if his foot slips. Students in the schools are strong in mass action—strikes, walk-outs, etc.—for their action, however silly or perverse, is always unanimous. The sensible lad never thinks of holding out against the folly of his fellows. The whole bidding of his experience has been, “Conform or starve.”

Family and clan ties mean much and there are few duties more sacred than that of helping your kinsmen even at other people's expense. You feel that it is right to provide berths for your relatives and no scruple as to their comparative fitness tweaks your conscience. When a man is appointed to office his relatives even unto the *n*th degree call upon him with congratulations and suggest that he find places for them in his new post.

After he takes office the protégés of his predecessor, realizing that their room is more prized than their company, have the grace to get out as soon as they can "look around."

Or take India. Recent settlement operations in certain parts of Northern India have revealed that, in some places, the average agricultural laborer is not infrequently compelled in time of stress to mortgage his personal liberty. In return for a small sum of money, which he may happen to need at the moment, he agrees to serve the man from whom he has borrowed. The money is not repaid, nor is it intended to be repaid; but the borrower remains a life-long bond slave of his creditor. For his work he merely receives an inadequate dole of food, and to all intents and purposes is in the position of a medieval serf.¹⁵

9. *Neglect of play and recreation.* In county after county in China you will not find a rood of land reserved for recreation or pleasure. No village greens, no lawns, no flower-beds or ornamental shrubbery, no parks, and very few shade-trees. Children are employed as early as possible, and few have much opportunity for play if their services can be used. This absorption in the quest for necessities may account for the spread of the opium vice. Observes the Philippine Opium Commission: "What people on earth are so poorly provided for food as the indigent Chinese, or so destitute for amusement as all Chinese, both rich and poor? There are no outdoor games in China, or indeed any games except in a gambling sense. Absolute dullness and dreariness seems to prevail everywhere. As these two demons drive the Caucasian to drink so they drove the Chinese to opium."

¹⁵ "India in 1919," published by the Government of India, 1920, pp. 125-126.

CHAPTER XII

PROVOCATIVES OF POPULATION PRESSURE

AMONG the chief contributors to population pressure, once the arch enemies of human life have been made powerless, are:

1. *The early marriage of females.* It is safe to say that for two thirds of mankind the typical girl has a husband at puberty (from the tenth year near the Equator to the sixteenth year in Scandinavia) or within two or three years thereafter. Mating is not deferred much beyond the date when Nature gives the signal, and reproduction proceeds nearly as among an animal species in its natural state. In modern Western society, on the other hand, various influences have conspired to delay the mating of the female until some years after womanhood has been fully attained. Among the various peoples the average of brides at their first marriages ranges probably from 22 to 28 years, which means that about a third—and that third the most fertile—of the female's reproductive period has passed unutilized. This alone would cause the births from Western wives to be decidedly fewer than those from Eastern wives. A study of Scottish families completed by 1911 shows that when the wife married at 17 the average number of births was 9; married at 22, the births averaged 7; married at 27, the births averaged 5. Furthermore maids that are in their twenties when they become wives are likely to have ideas of their own as to the scope of their reproductive duty, which is not the case with callow

girls delivered to husbands as soon as they are nubile.

2. *Female subjection.* The sacrifices—of freedom and happiness, of health, nay, even of life—which unlimited child-bearing imposes upon the mother, so far exceed the burden a large family imposes upon the father that it is not too much to say that family limitation is chiefly woman's concern. There is no means of measuring what the sexually exploited wife loses in freedom, happiness, or health, but the Census of India measures what she sacrifices in life. Mr. H. G. W. Meikle, actuary of the Government of India finds: ¹

Female mortality is greater than male:

At all ages amongst Hindus and Mohammedans in the Punjab and amongst Mohammedans in the United Provinces.

At ages 50 and under amongst Mohammedans in Bengal.

At ages 45 and under amongst Mohammedans in Bombay.

At ages 40 and under amongst Hindus in Bombay.

At ages 10 to 40 amongst Hindus and Mohammedans in Madras.

At ages 30 and under amongst Buddhists in Burma.

At ages 15 to 30 amongst Hindus in the United Provinces.

At ages 25 and under amongst Hindus in Bengal.

It will be noticed that the heavier mortality experienced by females is generally more marked among Mohammedans than Hindus. This almost certainly is due to the *Parda* system.

The best brake on this murderous prolificacy is the elevation of girls and women in the home, the state, the church, the university, industry, the professions, social life; not in their own eyes only, but in the eyes of the other sex as well. It is largely owing to the growing self-consciousness and social value of their women that, among

¹ "Report on the Age Distribution and Rates of Mortality Deduced from the Indian Census Returns of 1921 and Previous Enumerations," 1926, p. 22.

the most progressive peoples, the great fall in mortality in the last half-century has been accompanied by a corresponding fall in fertility. It is the undue subordination of the wife to the husband, of the female sex collectively to the will of the dominant males, which has brought upon Asia a condition of overpopulation becoming ever more stifling, distressing, and intolerable since the abandonment of the old folk customs of abortion and infanticide, and the launching of the warfare on disease.

3. *Ancestor worship.* In China to die without leaving a son to perpetuate the family cult is considered one of the greatest misfortunes that can befall a man and at the same time a crime against the whole line of ancestors. Every man marries; and if his wife has reached her fortieth year without bringing him a son, it is his religious duty to take a concubine.

4. *Reliance upon children as an old-age insurance.* In 1911 I wrote: ²

Lacking our opportunities for saving and investment, the Chinese rely upon the earnings of their sons to keep them in their old age. A man looks upon his sons as his old age pension. A girl baby may be drowned or sold, a boy never. In a society so patriarchal that a teacher forty years old with a family still turns over his monthly salary to his father as a matter of common duty, the parents of one son are pitied while the parents of many sons are congratulated.

That this motive has not weakened appears from the testimony of W. H. Mallory ³ fifteen years later.

Another cogent reason for the wish to have large families is to provide support for the parents' declining years. This is the old-age insurance policy of the Chinese. In the poorer classes especially many children are desired, particularly males, in order

² "The Changing Chinese," p. 98.

³ "China: Land of Famine," 1926, p. 90.

that at least one or two of them may live to maturity and care for their parents when the latter are no longer able to make a living. The feeling of obligation of a child toward its parents is so much a part of the character of the individual Chinese that it is only in exceptional cases that a son fails to put first the interests of his father and mother and even of his older brother. There are few opportunities for saving, especially in the villages; and this procedure furnishes the best possible assurance for declining years.

5. *The joint family.* In India the communism of the joint family system deprives couples who limit the number of their children of most of the economic advantages of the small family, while it relieves couples with large broods of most of the economic penalties of the large family. Thus the director of education in a native state told the writer: "I live in a household of five brother families—thirty persons in all. We dwell in one house, eat at one table and are looked after by one staff of servants. Every month I give my salary (650 rupees) to my father, and all my brothers do likewise. Thus all the incomes form a single fund. All are for each and each is for all. The Family is a mutual insurance association, a buffer between the individual and misfortune. If one of us is sick or out of work, he and his will not come to want. If one couple has six children and another but two, the children will be equally well fed, clothed and educated. If the Head brings a bolt of silk from the bazaar, each wife gets a gown off it. If a box of sweetmeats is bought, the children share alike."

In China a man's responsibility for the sustenance of his offspring is qualified by a family solidarity which goes far beyond ours. "The family . . . approaches our idea of the clan or the gens . . . Frequently these oversize families live in the same establishment, a residence con-

sisting of court after court fairly overflowing with children and mothers and fathers.”⁴

In Japan where marriages are arranged by families the House or family group looks after any who fall into distress. Since the burden of offspring is shared by a wider group than the parents, large families are encouraged.

6. *Reluctance to emigrate.* One cause of the stifling population pressure in China is that the Chinese do not feel free to follow the beck of distant opportunity. Says Mallory:⁵

The necessity of being buried at the old home is a real one with the people of China. No matter how far afield a man may go during his lifetime, if he dies away from home his body must be brought back even though an ocean voyage is necessary. This custom coupled with that of ancestor worship furnishes an almost indissoluble tie to the particular plot of ground which has marked the abode of the family for generations, no matter how greatly its members may have increased in numbers, nor how great may have been the decrease in the fertility of the soil, nor how seriously the dependability of the crops may have been affected by the changing forces of nature through the ages.

In the same volume⁶ Dr. John H. Finley draws this striking comparison:

There is a pioneer belt along the northern front of China in Manchuria and Mongolia which could accommodate millions upon millions of ill-fed or starving Chinese farther south. If such fields were open to settlement and cultivation in America, there would be such a rush as there was a few years ago to the last frontier lands in Oklahoma. The American settlers would not be burdened in their flight by their Lares and Penates, as was Æneas of old, who not only bore them with him but carried his

⁴ H. K. Norton, "China and the Powers," 1927, p. 185.

⁵ Work cited, p. 100.

⁶ *Ibid.*, p. xiii.

father on his shoulder. The Chinese peasant says, however, in the face of like allurements: "Who would take care of the graves of my ancestors?"

7. *Want of prospect of rising in the social scale.* Of this there could be no better illustration than the behavior of the European peoples before the revolutions which since 1789 have so contributed to raise the self-respect and standards of living of the commonalty. In France, so long as the exactions of the crown and the nobility left the common people with slight hope of getting on, they increased as fast and as far as the extension of production made it possible for a greater number to subsist. Thicknesse in 1776 quoted: "A French gentleman well acquainted with the constitution of his country told me about eight years since that France increased so rapidly in peace that they must necessarily have a war every twelve or fourteen years to carry off the refuse of the people." Writing in 1789 Arthur Young, the famous traveler, declared that France was then decidedly overpeopled. He had observed everywhere "most unequivocal signs of distress," "numbers dying of diseases arising from insufficient nourishment," and had become convinced that the kingdom would be "much more powerful and infinitely more flourishing with five or six millions less of inhabitants." It was not until the Revolution had swept away the old exactions and abuses and the ordinary peasant saw a chance to gain comfort or property, that the French came to practise generally that procreative prudence for which they are noted.

In the kingdom of Naples, before Garibaldi and his Thousand broke the Bourbon yoke and opened upward paths to the toiling masses, the land was overburdened with people. The bulk of the lower classes went "clothed in the skins of beasts with the hair on or in tattered

cloaks two or three generations old." They lived "almost entirely in the open air, without even at night, or in wet weather, better shelter than that of a mere shed," and were "almost as ill-fed as clothed and housed except during the short seasons in which the great demand for rural labor, combined with the extraordinary bounty of Nature, enabled them to feast for a while upon macaroni, maize, legumes, fruit and vegetables."

8. *Ignorance and hopelessness.* In the worst rent-racked portions of the Scottish Highlands, "misery," wrote Thornton⁷ in 1845, "exhibits its usual tendency to perpetuate and extend itself." "Early marriages are most frequent among the poorest of the people; and wherever an excessive increase of population takes place, it can generally be traced to the laboring class whose members marry without a shilling and without any other place to live than in their parents' houses."

It is Ireland, however, which affords a classic instance of how, under an abominable social system imposed by aliens, ignorance and hopelessness result in a reckless prolificacy which adds immeasurably to the miseries of the people. Eighty years ago, Ireland had become overpeopled, until half the Irish lived on potatoes and two fifths dwelt in one-room mud cabins. Thornton⁸ quotes thus on Donegal:

"Nothing can exceed the miserable appearance of the cottages there, always teeming with an excessive population. The people are intelligent enough to perceive the sources of their distress. They admit that they are too numerous, 'too thick upon the land'; that they are 'eating each others' heads off.' But what can they do?

⁷ W. T. Thornton, "Overpopulation and Its Remedy," 1846, p. 250.

⁸ Work cited, p. 90.

Another passage from Thornton reads: ⁹

In a parish containing a population of 10,553, it was found by the Roman Catholic clergymen of the place, on a careful examination, that there were altogether 400 beds, so that, allowing three persons on an average to each bed, 9553 must have lain on straw at the best;—and from a similar calculation of the number of bedsteads, it further appeared that 7070 persons were lying on the floors of damp cabins. In a village within the same parish, of 45 families, comprising 206 persons, there were ascertained to be just 39 blankets. In another parish, containing 1648 families, there were found to be 388 families with two blankets each, 1011 with one blanket each, and 299 with no blankets at all. What is called a blanket is, moreover, frequently nothing more than a bundle of rags, for the same article has been known to last a family for seventeen years, and is generally in constant use both night and day, many a mother having little other clothing. When beds and bed clothes are wanting, straw is the most usual substitute for both, but even straw must be carefully husbanded. “The straw we lie on,” said one of the Mayo cottiers, “was given us by some neighbors in charity; we do not change it; we do not part with it all; but as it wastes away, the neighbors give us a wisp to add to it.” When straw cannot be procured, the poor “pull the rushes that grow on the sandbanks by the roots, and spread them as a bed for themselves, just as they would do for pigs.”

Although couched eighty years ago, Thornton’s conclusions are still good sociology.¹⁰

It is only those who have never tasted the conveniences of life who are ready to propagate their species, without any better prospect than that of ability to keep themselves alive. It is because the son of an Irish cottier has always considered a fill of potatoes to be the height of physical comfort, that he esteems a few square yards of ground a very competent marriage portion.

⁹ W. J. Thornton, “Overpopulation and Its Remedy,” p. 105.

¹⁰ *Ibid.*, p. 263.

The true cause of the overpopulation of Ireland must be looked for in the ancient and inveterate poverty of her people. But for this, the occupation of the land would have produced effects the very opposite of those which have actually proceeded from it, and would have established the prosperity of the peasantry on a firm basis, instead of increasing the number of participators in their misery.

An attempt has been made to show that misery renders men reckless in marriage, as in everything else, and that, in order to make them provident, it is first necessary to make them comfortable, and to make the continuance of their comfort contingent on their own behavior. It has been asserted that indigence, the never-absent symptom of overpopulation, is likewise its principal upholder and promoter. If these opinions be correct, a permanent cure of overpopulation may be effected by any means that will raise the laboring classes from the poverty in which they are sunk, and provide them with adequate means of supporting themselves.¹¹

CONDITIONS WHICH MAKE FOR POPULATION PRESSURE.
In general the self-regulative power of a population will be low when

1. The masses are custom-bound and new wants are slow to strike root.
2. The lowly never presume to ape the manner of life of their social superiors.
3. The social economy is static, so that there is great difficulty in escaping the lot one was born to.
4. Caste barriers shut people up in the paternal occupation and social status.
5. An education is costly and hard to come by.
6. The bulk of the people are servile, ignorant, and superstitious.
7. Abortion, infanticide, and contraception are under the ban of religion.

¹¹ W. J. Thornton, "Overpopulation and Its Remedy," p. 271.

8. A sacerdotal value attaches to male posterity.
9. The government is remote and autocratic.
10. The female sex is regarded as inferior to the male sex.
11. The schooling of daughters is regarded as superfluous, or even dangerous.
12. The mating of young people is in the hands of parents.
13. The girl is married at puberty or shortly after and is years younger than her husband.
14. Family communism weakens a man's sense of responsibility for maintaining his offspring.

CONDITIONS TENDING TO PREVENT POPULATION PRESSURE. Chronic population pressure will not develop when the influences which beget foresight and self-control in propagation are generally felt. Among these brakes are:

1. Traditional standards of comfort and decency pervading all classes.
2. The ready downward percolation of new wants from the social superiors.
3. Wide diffusion of literacy and instruction, revealing purple horizons.
4. Many open doors for gaining an education and entering the higher walks of life.
5. The enhancement of the self-respect of the masses by their sharing in political power.
6. A democratic type of social organization which encourages the lowly to aspire to any station or distinction.
7. Abundance of opportunity for the empty-handed but industrious to accumulate property.
8. Security—especially of the petty property-holders—in the enjoyment and transmission of their property.

9. General acceptance of a high standard of what parents should do for their child.
10. A low economic value of children to their parents.
11. Postponement of the marriage of girls until they reach full womanhood.
12. Prevalence of the opinion that the daughter is entitled to as good an education as the son.
13. The romantic conception of love between the sexes.
14. Freedom of matrimonial choice on the part of young people.
15. Equality of the sexes, particularly of wives with husbands.
16. A religion which offers a *personal* rather than a *family* salvation.

CHAPTER XIII

PENALTIES OF POPULATION PRESSURE

A TEEMING people can no more evade its subsistence limits than a man can elude gravity. The food requirement is inexorable; numbers will be limited in any case. The only question is whether the people will adapt itself by curtailing fertility, or multiply blindly, leaving its volume to be kept down by the squeezing and crushing of its weaker members against the food limitations of the environment. In the latter case there are dire penalties to be paid.

1. *Elimination of infants.* In China deaths are brought to balance births largely by means of a dreadful loss of babies. This woman has borne eleven children, and all are dead; that one is the mother of seven, all dying young; another has only two left out of eleven; another, four left out of twelve. Such were the cases that occurred offhand to my informants. One missionary canvassed his district and found that nine children out of ten never grow up. Dr. McCartney of Chungking, after twenty years of practice there, estimated (1910) that 75 to 85 per cent of the children born in that region die before the end of the second year. The returns from Hong-Kong for 1909 show that the number of children dying under one year of age is *eighty-seven per cent* of the number of births reported within the year! Brutal though it may sound, it is really a mercy that the inevitable elimination comes early, instead of later dragging down great numbers of

adults into such a state of undernourishment that they are thinned out sufficiently. So necessary is the loss of infants to hold numbers down to the food supply that I have known humane mission physicians to frown on proposals to instruct Chinese mothers in the feeding and care of their babies.

2. *Death from chronic undernourishment.* With respect to the laborers of the untouchable castes "on whose toil the cultivation of the rice fields of Southern India mainly depends," Professor Gilbert Slater observes: ¹

. . . their earnings in grain and coin barely suffice for the subsistence of families large enough to maintain their numbers from one generation to another, the surplus offspring dying, they are habitually hungry, and it is only because they make their own huts in their spare time, collect their own fuel, need scarcely any clothing and enjoy abundant sunshine, that they can subsist at all.

No doubt this half-famished state has become widespread and chronic partly in consequence of tying down the safety-valve of periodical famine. In India, before the British developed relief measures, from time to time famine, following a succession of crop failures in some region, would sweep away a large part of the population. Then, for a generation or two, there would be land enough for all, a concentration of agricultural effort on the better soils, and a burst of prosperity which long would leave an enduring after-shine in the popular mind in the form of memories of "the good old times." But now, with railroads to bring in food and government famine-relief works to enable the penniless to obtain it, none starve, although the price of food elsewhere is raised and the burden of the local crop failure is spread over most of India. Since the superfluous are not swept away, there is no post-famine

¹ P. P. Pillai, "Economic Conditions in India," 1925, p. xiii.

prosperity, no chance for famine survivors to lift their heads out of the stifling pit of poverty and breathe fresh air. Thanks to its checking the occasional catastrophic removal of surplus population, a human and scientific government has unwittingly made mass poverty chronic.

3. *Lowered resistance to preventable disease.* In India, testifies Professor R. K. Mukerjee: ² "the only checks which seem to operate are brought about by the very fact of overpopulation, viz., pestilence and famine." "The want of staying as well as resisting power in the physique, which is due to inadequate nourishment or sustenance, consequent on overpopulation, is responsible to a great extent for the prevalence of malaria, plague, consumption, and other diseases which are now fast spreading in the country."

In his 1921 report, Mr. Thyagarajaiyar, the census superintendent of the Indian state of Mysore, quotes the following passage from Sir W. Holderness's "Peoples and Problems of India" (1912) as applicable to his people:

The wastage of life, especially child and infant life, is great. Diseases which in England have given way before sanitary and medical science, improved dwellings and better habits of life, stalk abroad; plague, the mysterious and loathsome disease which the English people knew in the fourteenth century as the Black Death, has, in India, in fourteen years carried off seven million people, or more than the whole population of "greater London." Cholera, smallpox, malarial fevers are endemic in the country, and collectively destroy lives by the million. The "preventable mortality" is in one sense great, but it is not "preventable" by any ordinary means within the power of the State. European principles of medicine are represented by the public hospitals and dispensaries which are dotted over the country and which relieve an amount of sickness and suffering. But the great majority of Indian people die without medical aid. That

² "The Foundations of Indian Economics," 1916, p. 17.

population tends to increase is a sign that the forces of life are stronger than those of destruction. But the resigned pessimism and quiet melancholy which characterize the religions and the mental outlook of the people, and which seem to brood over the landscape and infect the atmosphere, are not without a physical basis.

4. *Vast destruction of life in natural calamities.* Another penalty of population pressure is appalling loss of life from hurricanes, earthquakes, tidal waves, volcanic eruptions, floods, and droughts. In an overburdened land hunger forces myriads to take desperate chances. They push cultivation closer and closer to the crater's lip, and when the volcano suddenly erupts they are buried or asphyxiated. They settle the rich alluvial plain which lies fathoms below the diked Yellow River, and when the swollen monster bursts his bonds they drown by millions. They squat on the low flats facing the sea, and some day a tidal wave sweeps them away like flies. Half a million live in frail boats on the Pearl River, and from time to time a typhoon smashes their sampans like egg-shells. The masses have to build flimsily, and when the earth quakes they are buried or burned in the ruins of their houses. The United States could lose half its crop this year, yet come to the next with none starving; but in China a 20 per cent crop loss means the famishing of untold numbers. A recent study by the Student Agricultural Society of the University of Nanking brought to light that between the years 108 B.C. and 1911 A.D. there were 1828 famines, or nearly one every year, in some one of the provinces. Untold millions have starved. In fact the normal mortality of the Chinese may be said to contain a constant famine factor. The standard of living is but a hand's breadth above bare subsistence, and reserve there is none. This is why in

over-peopled Asia disaster occurs on a colossal scale.

5. *Exaggerated loss of life from civil disorder and warfare.* The denser a population and the more precarious its food supply under normal conditions, the less it is able to endure interruption of order or peace. When hostilities occur many more die from hunger, disease, and exposure than from weapons. The mere quartering of troops upon the local population sentences many of them to starvation. Even the passage of a friendly army is worse than a visitation of locusts. This, no doubt, accounts for the appalling devastation war has always wrought in China. Observes Mabel Ping-Hua Lee: ³

The increase of Chinese population was interrupted chiefly by two causes: famine and war. War was especially important and consisted either of civil wars or wars with foreigners. mainly the Northern barbarians. From these figures, the effects of warfare are easily apparent. In the beginning of Later Han, the population had been reduced by two-thirds; in the Three Kingdoms by about six-sevenths; in the beginning of Tang, by about two-thirds; and in the reign of Tan Su Chung, about five years time, by over two-thirds; in the beginning of Sung, by over a fourth; in the beginning of Southern Sung (1160 A.D.) by more than half; and in the beginning of Tsing, by over three-fifths.

Dreadful as war is, the closing of the safety-valve of war may have grave consequences among a teeming people. In 1709 the great Chinese Emperor Kanghi said in an edict issued to the Department of Agriculture: "When I traveled to the South I noticed that the wealth and plenty of the villages were far less than in the old times. . . . At present the realm has been peaceful for a long time and the population becomes increased and multiplied day by

³ "The Economic History of China," 1921, p. 437.

day. Consequently the food supply becomes gradually insufficient." ⁴

6. *Waste or exhaustion of natural resources.* Prodded by keen want a dense population exploits its natural environment in senseless and ruinous ways. In the mountainous interior of China any slope a man can keep his footing on is cleared and cultivated. More than once I have heard of a man breaking his neck *by falling out of his field!* The wash from such fields, is, of course, frightful, so ere long the flanks of the mountains are stripped of the soil slowly accumulated through geologic time. In places the melancholy end has arrived: mountains no longer shaggy and exuberant like Homer's "many-fountained Ida" but dry gray skeletons; the rich river bottoms buried under silt and gravel; the population dwindled to one family in four square miles!

Even the craggy steeps are not left to grow gnarled trees, which is all they are fit for. The far and forbidding heights are scaled by lads with ax and mattock to cut down or dig up the seedlings that would, if let alone, reclothe the devastated ridges.⁵

On the Kowloon hills opposite Hong Kong there are frightful evidences of erosion due to deforestation several hundred years ago. The loose soil has been washed away till the country is knobbed or blistered with great granite boulders. North of the Gulf of Tonkin I am told that not a tree is to be seen and the surviving balks between the fields show that much land once cultivated has become waste. Erosion stripped the soil down to the clay and the farmers had to abandon the land. The coast hills of Fokien have lost most of their soil and show little but rocks. Fuel gatherers constantly climb about them grubbing up shrubs and pulling up the grass.⁶

⁴ Miss Lee, work cited, p. 415.

⁵ E. A. Ross, "The Changing Chinese," 1911, p. 79.

⁶ *Ibid.*, p. 23.

In Western Bengal "with quickening rhythm" appear the denudations of the shorn slopes, the encroachment of the waste laterite lands, the slow agony and death of rivers, the silting of the banks, the scarcity of water and the destructive floods, the spreading of the marshes, the falling of the water level, the reduction of the fertility of the soil. Malaria wipes out half the population, "leaving the other half in utter despair or sullen resignation to Fate, almost deprived of the wish to live." Villages dwindle to mere crumbling ruins; towns wane to sleepy villages.

Nor is this despoiling of Nature confined to the Far East. "There are parts of Asia Minor, of Northern Africa, of Greece, and even of Alpine Europe, where the operation of causes set in action by war has *brought the face of the earth to a desolation almost as complete as that of the moon.*"

To be sure, as some of our own experience shows, Commercial Greed may lay waste as well as Popular Need. But never is Nature so ruthlessly plundered and ravaged, never do far-sighted policies of Government which protect the birthright of Posterity from the avarice of To-day meet with such general resistance, as when the land groans under its burden of population.

EFFECTS OF A SUDDEN REMOVAL OF POPULATION PRESSURE. The bearing of population pressure on the lot of the masses may be inferred by noting what happens when it suddenly vanishes. In 1348-49 the bubonic plague swept away half the people of England. Appalling as was the bereavement and desolation, the economic effect of this abrupt rarefaction of population was much the same as if the area of fertile land had been doubled at a stroke. "So great was the want of labourers and workmen of every art and craft," writes a contemporary, "that a third

part and more of the land throughout the entire kingdom remained uncultivated. Labourers and skilled workmen became so rebellious that neither the King, nor the law, nor the justices, the guardians of the law, were able to punish them." Tenants refused to pay the old rents, so that the landlords had to accept a third or a half less or see their holdings abandoned.

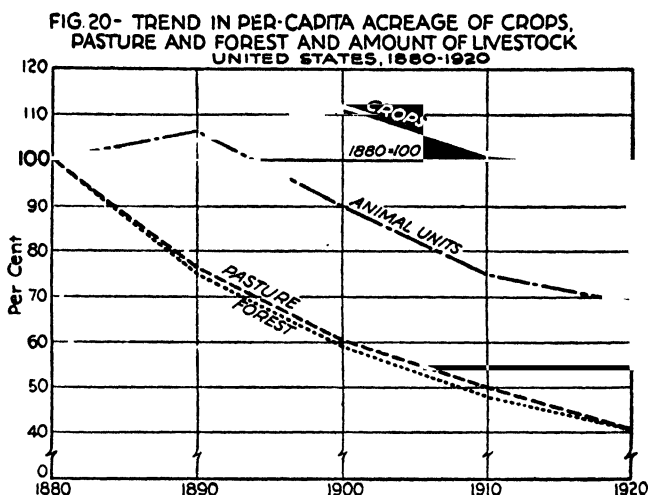
The masses were so thinned that "from all parts of England comes the same cry for workers to gather the harvests, to till the ground and to guard the cattle."⁷ "The landowners' need was recognized as the labourers' opportunity, upon which they were not slow to seize. Wages everywhere rose to double the previous rate and more. In vain did the King and Council strive to prevent this by legislation. The people all at once learnt their power and became masters of the situation and, although for the next thirty years the lords and landowners fought against the complete overthrow of the medieval system of serfdom, from the year of the great mortality its fall was inevitable and practical emancipation was finally won by the popular rising of 1381."

In Norway the Black Death abruptly reversed the man-land ratio; land became a drug in the market as tenants became scarce. Many of the old aristocratic families were "ruined," i. e., reduced to the hard necessity of tilling their land themselves.

If the quick removal of population pressure exalts cultivators and laborers economically and socially while depressing the proprietors, one may deduce that increase of population pressure aggrandizes the proprietary class and worsens the lot and status of the toilers—which is precisely what has been observed times without number.

⁷ F. A. Gasquet, "The Great Pestilence," 1893, pp. 196, 197, 200.

WHAT POPULATION GROWTH AMONG US MIGHT IMPLY. Our "boosters" predict exultantly that before the end of the next century four or five hundred million people will inhabit the United States. Now, the production per capita of agricultural products in our country apparently reached its crest about 1906-07 and since then has waned. In the words of the expert of the U. S. Department of Agricul-



ture, O. E. Baker, "Our nation is probably near, possibly past, the crest of greatest average income per capita; and every increment in population is likely to increase the complaints of the high cost of living." It is, of course, impossible to foretell what strides the art of food production may take in the near future; but it is certain that, if the growth of our population quite outruns improvement in the art of utilizing the soil, there will be some ugly developments in the lot of the common people.

Not that we shall ever reproduce here the China of to-day; for at all points our descendants will have the benefit of scientific knowledge. Insanitary homes, over-

crowding, overbuilding of urban land, the formation of slums, will certainly not be tolerated as they have been in the Time of Ignorance. All will have pure water to drink, and most will lead disease-free lives. Although natural gas, oil, and anthracite coal will have been used up, water-power will be so cheap that the homes of even the poorest will be well lighted. Tropical products will be placed on the market at so little cost that the diet of even the day-laborer's family will include fresh fruit. Even now, what with motor-car and hard roads, the barber is able to take his family farther on a holiday outing than ever Pharaoh could. As charioteers of the sky our great-grandsons will be even more mobile. Good reading matter will be as free as air. All persons of normal mentality will have a good elementary education. Thanks to the magic screen, the spade man will be familiar with the characteristic scenery of every region of the globe. For the wages of an hour he will witness spectacles more splendid than ever feasted the eyes of Nero, Harun al-Rashid, Louis XIV, or Nadir Shah.

On the other hand, with the country-side so thickly settled, hunting and fishing would be poor save for the members of wealthy clubs maintaining game preserves. The wayfarer would not be as free as now to roam woods or follow streams. Private grounds would be jealously guarded. Meat would be dear, so that of necessity the bulk of the people would be vegetarians most of the time. On the better farms little of wood, pasture, or meadow would remain; where the soil is rich, tilled fields would be the rule.

As labor became plentiful, coarse food crops which call for much toil would contribute more to the popular diet. Market gardening with its spade work and hoe work would encroach on field culture with machines. Milk, but-

ter, and cheese would figure little on the tables of the hand-workers. Bread would be less the "staff of life" than the corn-meal mush of the early Americans, the early Romans, and the North Italians of to-day. Our notorious sins of waste of food would be avoided, but only by an outlay of time and pains which would lower the general standard of comfort.

Two thirds or more of the worker's wages—instead of three eighths as now—would be laid out for food and, just as in China, many things would be eaten which we reject as flavorless. The menace of even a partial crop failure would be so universally recognized that a long drought, a late spring, or an early frost would overcast the public mind. Unless world free trade should come to prevail—and certainly in the last three quarters of the century, notwithstanding the apostolic zeal of its advocates, we have made little progress toward it—the government would maintain great stores of grain as a safeguard against famine.

Woolen clothes would be less worn, their place being taken by cotton—plain or quilted. The wearing of woolen might, indeed, become a badge of "class." Houses heated throughout in winter would become a luxury, numbed hands being warmed over the brazier as in the populous and deforested parts of the world. A wooden house would become a curiosity, and in our dry regions the mud-built domicile of the Far East might become typical.

With far fewer possessed of a margin above the physical necessities of life, there would be less vice, "splurge," and waste than now; but also less money for philanthropy and social betterment. Many of our current humanitarian activities would go by the board from lack of support, and the (literal) "struggle for existence" would be suffered to resume much of its wonted course. Democratic self-

respect would be impaired in the masses, petty thievery would grow, and, as in China, standing crops would have to be watched at night. Nor would anyone grow trees unless he could live in their midst and so prevent their being stolen.

The waterfalls would be gone, the tumbling streams being led underground to be shot through turbines. Little native woods would be left save the public forests. Elsewhere springs, clear streams, log-jams, and trout-haunted pools would be only a memory. Outside the public forests and a few preserves owned by millionaires, the beauties of virgin nature would be lost as irretrievably as was the sylvan loveliness which inspired the early Greek poets.

Such is the lot we may come to within a single long lifetime in case our population fanatics are allowed to have their way.

CHAPTER XIV

POPULATION PRESSURE AND WAR

WARFARE is not always the outgrowth of the aggressive spirit in one or both of the belligerents. Among savage tribes, the irritant which continually stirs up fighting is population pressure. Intensive hunting cannot permanently enlarge the food supply as can intensive agriculture; so, when a tribe has expanded to such a degree that it can no longer live off its own hunting-grounds, it seizes the hunting-grounds of its weakest neighbor. The bloodshed which ensues relieves population pressure for a time.

It is now well known that the prime cause of the endless assaults of Celt and Teuton, Goth and Hun, upon the northern frontiers of the Roman Empire was not simple love of loot, but the need of more room—due either to their own multiplication or to the pressure upon them of wandering peoples made homeless by the gradual drying up of Central Asia.

LATER CAUSES OF WAR MASK POPULATION PRESSURE. At one time the lust of chiefs and kings for more subjects or more revenue begat war. This survives still in the form of war-breeding dynastic ambitions and rivalry. At a certain stage religious questions set peoples by the ears. When international trade has become a gold mine, the endeavor of the traders of one country to shut out from overseas commerce the traders of another pulls the trigger. In the era of imperialism wars sprout from the struggle for colonies, for strategic points, and for secure sea routes.

Seeing that land grabbing and forcing of concessions characterize the policy of the rich and prosperous powers rather than of the overpeopled countries, the impression is current that population pressure has little to do with the wars of to-day. However, there are good reasons for believing that, whatever motives for aggression may lie on the surface, the real enemy of the dove of peace is not the eagle of pride, nor the vulture of greed, but the stork.

FOREIGN POLICY ELUDES PEOPLE-RULE. While the suffrage has been greatly extended, so that in domestic matters governments are obliged more and more to heed the wishes of the masses, it is childish to pretend that the common people of the great powers control their destiny in respect to war. The question of peace or war hinges on the conduct of foreign relations, and rarely can the ignorant, inexperienced, stay-at-home millions impose their wishes upon the directors of foreign relations. Concerning labor, or schools, or drink, or highways, they may hold opinions which their government will have to take into account. But, since they do not really know other peoples and governments and cannot anticipate the outcome of the foreign policy which their country pursues—their opinions about it will depend entirely upon what they have been told. Consequently, war-breeding national attitudes and policies originate not with the masses, but with those classes which shape the external policies of their government.

MOTIVES OF MODERN WAR-MAKERS. Now, these classes do not feel population pressure, and hence it does not mold their politics. It is not land-hunger that makes them favor aggressive policies. What the motive is depends upon the class. Promoters and financiers itch to get their hands on the undeveloped natural resources of backward countries. Investors, disgusted with the slender returns on

home investments and tired of the bonds of defaulting foreign governments, press for the acquisition of regions where they can invest their money in profitable enterprises under the national flag. Industrialists want their government to capture for them foreign concessions and markets or create colonies from which they can draw raw materials, peopled by natives to whom they can sell their surplus manufactured products. The nobility see in empire not only the aggrandizement of their own class but more posts for their sons in military, diplomatic, or colonial service. Army and navy officers are professionally interested in the seizure of "keys" and the acquirement of "strategic frontiers." Moreover, "forward" policies promise them adventure and excitement, besides exalting their social rôle. Scholars and intellectuals support power policies because it gratifies their pride to be subjects of a mighty nation.

However, under parliamentary institutions, these elements taken together cannot provide enough votes for ambitious designs which may involve the nation in war. Unless peasants and farm laborers, mill-workers and petty tradesmen, can be brought to imagine benefit for themselves or their children in national aggression, they will jib at being steered into peril. Should their trusted leaders marshal them in political opposition, the game of empire-building might be brought to a sudden halt.

POPULATION PRESSURE AS A STAGE PROPERTY FOR IMPERIALISTS. Here is where population pressure enters. By itself, indeed, it may not breed war. Look at the Chinese, the Indians, the Javanese, the Siamese, the Singhalese—crowded but not aggressive. From the realization, "We are cramped," a people does not infallibly draw the conclusion, "Therefore let us seize other people's land." They may see nothing near worth seizing and may be ignorant

of roomier ill defended parts of the world. They may lack a fighting caste to glorify war. Their governors may see no profit for themselves in sowing dreams of conquest in their people's minds. Folk traditions may be all in favor of toil rather than aggression.

But population pressure is a gilt-edged asset for imperialists seeking to win the masses for risky foreign policies. This comes out very clearly in the propaganda which went on in Germany before the World War. "More room," "a place in the sun," "*Drang nach Osten*," were dinned into the people's ears until they became an obsession. It was German prolificacy that gave point to these slogans. It was well known that less and less could Germany's soil feed her sons and that every year more of her people lived from foreign trade. As early as 1901 a prominent author, Arthur Dix, wrote: ¹

Because the German people nowadays increase at the rate of 800,000 inhabitants a year they need both room and nourishment for the surplus. . . . As a world power in the world market we must assert our place and make it secure in order that the younger hands may find room and opportunity for employment.

In the same year the economist Albrecht Wirth declared: ² "In order to live and to lead a healthy and joyous life, we need a vast extent of fresh arable land. This is what imperialism must give us." A decade later Daniel Frymann ³ in a book which went to its twenty-first edition said: "It is no longer proper to say 'Germany is satisfied.' Our historical development and our economic needs show that we are once more hungry for territory."

In 1912 at a general meeting of the Pan-German League Baron Vietinghoff voiced the opinion:

¹ "Deutschland auf den Hochstrassen des Weltwirtschaftsverkehrs."

² "Volkstum und Weltmacht in der Geschichte."

³ "Wenn Ich der Kaiser Wäre."

That discontent makes itself felt at home must be accounted for by the fact that our frontiers are becoming too narrow. We must develop an appetite for land; we must acquire new territories for settlement if we do not want to become a declining nation, a stunted race. We have to think of our people and of our children, in a spirit of genuine love, no matter if we are called war-mongers and brawlers.

The same year General von Wrochem declared before the Defense Association, "Germany with her ever-increasing inexhaustible increase of human beings wants more land for them to settle on"; while Admiral Breusing at a Pan-German celebration said, "The land-hunger of our people must, once for all, be satisfied."

Might not surplus Germans emigrate and thrive as millions of them did in the nineteenth century? No, the rabid nationalists would not hear of it.

General von Bernhardi, chief of the German staff, wrote in 1912:

We must endeavor to acquire new territories by all means in our power, because we must preserve to Germany the millions of Germans who will be born in the future and we must provide for them food and employment. They ought to be enabled to live under a German sky and lead a German life.

Although the German folk are as honest as any, the jingoes familiarized them with the brigand project of seizing land from weaker neighbors. Klaus Wagner in 1906 argued: "The great nation needs new territory. Therefore it must spread out over a foreign soil, and must displace strangers with the power of the sword." In 1911 Frymann voiced the idea, "But if we consider seriously the peculiar position of the German people, squeezed into the middle of Europe and running the risk of being suffocated for want of air, it must be agreed that we might be

compelled to demand from a vanquished enemy, either in the East or in the West, that he should hand over unpopulated territory."

Only three years before the World War, in his book, "Germany and the Next War," von Bernhardt contended:

Strong, healthy and flourishing nations increase in numbers. From a given moment they require a continual expansion of their frontiers. They require new territory for the accommodation of their surplus population. Since almost every part of the globe is inhabited, new territory must, as a rule, be obtained at the cost of its possessors—that is to say by conquest, which thus becomes a law of necessity.

Germans who gagged at these ruffian proposals were called "sickly," "old-womanish," "sentimentalists." Respect for the rights of weaker neighbors was denounced as "cosmopolitanism." Moderation was rated "a miserable Philistinism." Scruples against removing the neighbor's landmark were sneered at as "middle-class morality."

The trick of capitalizing population pressure for war-breeding policies succeeded brilliantly. In 1912 the Social Democrat Haase admitted in the Reichstag, "A considerable number even of our artisans, our small tradesmen, our officials—of our middle class in short—have been infected with this imperialistic mania." In his book, "Der Deutsche Chauvinismus," Nippold said in 1913, "The evidence submitted in this book amounts to an irrefutable proof that a systematic stimulation of the war spirit is going on based, on the one hand, on the Pan-German League and, on the other, on the agitation of the Defense Association." At the boisterous banquets in 1913 in centennial commemoration of the War of Liberation, this military note more and more drowned the notes of peace. The result was reported by the French military attaché

in Germany in 1913, "One may daily observe that moderate individuals, as well of the civil as of the military service, have the standpoint that France with her forty million inhabitants has not the right to rival Germany." ⁴

ITALY'S NEW TONE REFLECTS POPULATION PRESSURE. Italy of the moment affords a beautiful illustration of how population pressure creates the atmosphere in which jingoism and truculence thrive. Church-led, the Italian masses breed heedlessly, and there are twenty thousand families with more than ten children each. The birth-rate is 29, yearly natural growth 1.1 per cent, which holds the prospect of a doubling of population in about sixty-two years. Whereas in 1800 there were about seventeen millions wresting a living from the peninsula, now there are forty-two millions. In the five years before the war Italian emigration averaged 679,000 a year. Since the peace so many national doors have been shut that the stream out of Italy is scarcely half so broad. Every year there are 400,000 to 500,000 more seeking their bread in an Italy unprovided by nature with coal, oil, iron, and other basic wealth. Inevitably population pressure rises and therewith spreads a bellicose spirit despite lively recollections of the miseries of the recent war. Italy, like an overheated boiler with too small a safety-valve, threatens to explode.

Mark the new menacing note in the utterances of Signor Mussolini in 1926. At Tripoli he said, "We shall eventually break the circle arrayed against us."

To the crowd in Genoa: "We have given weapons to the nation in these four years. Above all we have given the nation a military spirit, a warrior mind. . . ."

"The struggle between nations becomes sharper every day despite certain hypocritical and weak pacifists. Ev-

⁴ Nothing here is intended to prejudice the question of the apportionment of guilt for bringing on the war.

ery nation erects its barrier of selfish purposes and leaves no longer any scope to the lies of international brotherhood. We must therefore, O Genoese! O Italians! set our teeth for this fight, which is to-day only economic and moral. We must unite all our will, link up all our effort. We must fight day by day."

Before the Italian Senate he said, referring to the accusation of imperialism: "Every living being who wants to preserve his existence has imperialistic tendencies, and therefore the nations that want to live must develop a certain 'will to power'; otherwise they vegetate and barely exist, and fall a prey to a stronger people who themselves have given a stronger development to their own will to power."

"It will be necessary that even this young Italy of ours make itself a little room in the world. I think it would be a proof of intelligence to give it to us when it is time and with good grace, because that is truly the way to preserve peace, to have a just and lasting peace. . . . That peace, just and lasting, must be accompanied by the satisfaction of our most legitimate and most holy interests. You cannot condemn a people to vegetate, especially when it is a people like the Italian people, which has a venerable history and a most noble civilization, which has rights that it vindicates highly."

Here we recognize the same sinister inflammatory ideas which the German jingoes employed—"encirclement," worship of force, "will to power," need of room, "holy interests," etc. Small wonder that the Duce who seeks to take a part of Asia Minor from Turkey, to get France to cede Corsica or Tunis, to invade Albania and make it an Italian colony, warns, "War may break like a hurricane."

JAPAN'S RESTLESSNESS REFLECTS POPULATION PRESSURE. After Italy, Japan is the country which now most

alarms the friends of peace; and in Japan one can see plainly how rising population pressure befriends jingoism. Japan is small and less than a sixth of its area is fit for cultivation. In 1926 the population passed the sixty-million mark, and the yearly excess of births above deaths is near three quarters of a million. Her cramped people feel the urgency of their need of more room. Armies and navies look like the best way for her to get it or to make it impossible for others to keep her from getting it. In the uncurbed prolificacy of her people and the closing of the doors to Japan's overflow by the countries bordering the Pacific you have the secret of such popularity as the Japanese jingoists enjoy.

POPULATION PRESSURE A CHERISHED ASSET OF THE WAR-MAKERS. Militarists not only make capital of population pressure but cherish it as an asset. At Tripoli Signor Mussolini said, "Italy has always been a prolific nation, and she intends to remain such." So he lays a tax on bachelors, fills Italy with maternity institutions, prosecutes birth-control propaganda as "obscene," and proposes to tax childless marriages. Before the World War the French militarists said to the French, "Multiply or the Germans will get us." The German militarists cried to their people, "Multiply or the Russians will get us." French women and German women were incited to vie in producing as rapidly as possible sons whose final destination was to destroy one another upon the battle-field. *There was, in fact, an international competition in populations as well as in armaments.*

Signor Mussolini urges this when before the Italian Chamber he asks (May 26, 1927), "What are the present forty million inhabitants of Italy numerically when compared with the populations of Germany, Russia, and France?" "Italy should have a population of at least

sixty million within the next half-century if she wishes to count for something in the world."

When on January 27, 1926, there was given out an official statement that the Italian census showed a gain of population of three millions in four years, Signor Mussolini's newspaper does not draw the rational conclusion that an attempt should be made to slow down the pace of this increase; it suggests that sooner or later a territorial resettlement is inevitable. The "Tevere" urges penal measures against the advocates of family limitation. The "Tribuna" stigmatizes family limitation as "merely hedonistic" and remarks, "The copious blossoming of Italian hearths is the most potent instrument of Italy's inevitable world-wide expansion." The "Impero" chuckles, "Just think what prodigious and invincible armies these children will form in ten years!" Babies are the promise of soldiers, who are the raw material of national power.

So population pressure, the "aggressor's excuse," is a trump card for the war-makers. Hypocritically they deplore the population growth which obliges their nation to show its teeth, but the moment this growth slackens they stimulate cradle competition with the appeal, "We must breed more soldiers in order to be ready for the next war." If this be the last word in human wisdom it would be logical for humanity to resign itself to the prospect of an endless succession of wars whose function it will be to blot out human surpluses every little while.

VOX CLAMANTIS IN DESERTO. In June, 1919, the Malthusian League at its annual general meeting in London resolved:

The Malthusian League desires to point out that the proposed scheme for the League of Nations has neglected to take account of the important questions of the *pressure of population*, which *causes the great international economic competition and rivalry*,

and of the *increase of population*, which is put forward as a justification for *claiming increase of territory*. It, therefore, wishes to put on record its belief that the League of Nations will only be able to fulfill its aim *when it adds a clause* to the following effect:

"That each Nation desiring to enter into the League of Nations shall pledge itself so to *restrict its birth rate* that its people shall be able to live in comfort *in their own dominions without need* for territorial expansion, and that it shall recognize that *increase of population shall not justify* a demand either for increase of territory or for the compulsion of other Nations to admit its emigrants; so that when all nations in the League have shown their ability to live on their own resources without international rivalry, they will be in a position to fuse into an international federation, and territorial boundaries will then have little significance."

Of course the Peace Conference ignored proposals so eccentric to the reigning order of ideas.

DOES MODERN WAR LESSEN POPULATION PRESSURE? Formerly no one doubted that battle tends to correct overpopulation. Just as the lancet affords relief to the sufferer from congestion, the sword affords relief to the congested society. Or—to vary the simile—just as, after a spell of growing oppressiveness, a thunder-storm clears the air, so, after a gradual rise of population pressure and increase of international tension, the tornado of war sweeps away the excess of numbers and the survivors find life easier.

However, fighting is now conducted with elaborate and costly machines, so that it has come to be virtually an extrahazardous branch of engineering. Not the sword is the fitting symbol of Mars to-day, but the tank, the barrage, the dreadnought. Modern warfare is capitalistic—tons of metal hurled miles to kill one foeman. Hence wealth is poured out even more copiously than blood. There is more destruction and waste than carnage. The

dogs of war devour men, it is true, but even faster they lap up the resources by which men live.

Even the victor emerges from the war with its population reduced, perhaps, by a twelfth, but with a third of its capital dissipated. It has suffered a great economic setback; hence it experiences no post-war let-up in population pressure. The survivors find existence harder than ever; in fact low wages, unemployment, poverty, and misery abound more after the typhoon than they did before. War, therefore, is no longer to be relied on as a cheap ground clearer, a quick remover of excess population. That ghastly rôle is left to the grim familiars, Famine and Disease.

CHAPTER XV

POPULATION PRESSURE AND ECONOMIC PROGRESS

THERE is ground for believing that it was population pressure that pushed early man on from stage to stage of economic progress. The advance from the hunting stage to the pastoral stage did not follow promptly the domestication of animals, but awaited often the growth of numbers. Man seems to have first tamed animals for amusement rather than for food. In Africa we find the Ovambo "very rich in cattle and fond of animal diet, yet their beasts would seem to be kept for show rather than for food." ¹ Says Karl Bücher: "Generally speaking, the possession of cattle is for the negro peoples merely 'a representation of wealth and the object of an almost extravagant veneration'—merely a matter of fancy." ² An Indian village in the interior of Brazil "resembles a great menagerie . . . but none of the many animals are raised because of the meat or for other economic purpose." ³ "On the whole, then, no importance can be attached to cattle-raising in the production of the food supplies of primitive peoples." ⁴

Again, what caused man to pass from herdsmanship to tillage was not acquaintance with the magic results of cultivation but population pressure. Of the Navajos we read: ⁵ "Indian corn . . . was known to them apparently

¹ Quoted by R. T. Ely, "Evolution of Industrial Society," 1903, p. 39.

² "Industrial Evolution," 1901, p. 51.

³ Work cited, p. 51.

⁴ Work cited, p. 52.

⁵ Stephen, "The Navajo," "American Anthropologist," Vol. VI, p. 347.

from the earliest times, but while they remained a mere hunting tribe, they detested the labor of planting. But as their numbers increased, the game, more regularly hunted, became scarce, and to maintain themselves in food, necessity forced them to a more general cultivation of corn, and the regular practice of planting became established among them." Testifies Baden-Powell: ⁶ "Necessity has forced Rajputs and others to take to agriculture." Wallace declares: ⁷ "The prospect of starvation is, in fact, the cause of the transition [to agriculture] probably in all cases, and certainly in the case of the Bashkirs." Writes von Middendorf: ⁸ "Only the poorest Kirghises, driven by want, engage in tillage." An ancient chronicle, referring to the passage from pasturage to agriculture in seventh-century Ireland, says, "Because of the abundance of the households, in their period, therefore it is that they [the sons of Æd Slane] introduced boundaries in Ireland." ⁹ It appears that the earliest cultivators of the soil were "strangers attached to the tribe upon whom the rough work of the community fell, and who would be the first to suffer from scarcity of food." ¹⁰ Elsewhere we are told, "When hemmed in by impassable barriers or invincible enemies, pastoral tribes under the pressure of increasing population slowly become agricultural." ¹¹ Doubtless to the same force is due the change from extensive and shifting cultivation—i. e., after a crop or two the cultivator makes a fresh clearing—to intensive agriculture, whereby an alternation of crops and fallow enables the same land to be used forever.

⁶ "The Land Systems of British India," 1892, Vol. I, p. 135.

⁷ D. Mackenzie Wallace, "Russia," second edition, 1877, Vol. II, p. 47.

⁸ "Einblick in das Ferghana-Thal," p. 187.

⁹ Quoted by Edward Jenks, "A History of Politics," 1900, p. 46.

¹⁰ Work cited, p. 58.

¹¹ E. V. Robinson, "War and Economics," "Political Science Quarterly," Vol. XV, p. 584, December, 1900.

POPULATION PRESSURE THE GADFLY OF INDOLENT HUMANITY. One might argue, then, that it was the hunger of a growing population which goaded our ancestors on from stage to stage, driving them from reliance on Nature's offering of edibles to the regular production of food, forcing adoption of better methods of agriculture, and exacting an intenser utilization of natural resources. Had fertility been accommodated to the economic prospect in those far days, there would not have been the pressure which pushed tribes from hunting into herding, from herding into tillage, replaced the hoe with the plow, and caused rough waste land to be cleared, smoothed, terraced, diked, and drained.

Half a century ago the German economist Roscher wrote, "Inertia, both physical and mental, is so general that perhaps the majority of mankind would continue forever satisfied with their traditional field of occupation and their traditional circle of food, were it not that an impulse as powerful and universal as the sexual and that of the love of children compelled them to extend the limits of both." Toward the close of the last century Nitti the Italian economist declared, "The automatic excess of population which occurs in the three primitive periods, the barbarous, the pastoral and the agricultural, and also, although in a slighter degree, in the fourth, has been the greatest cause of human progress, since it has compelled entire populations to either undergo a transformation or to decay, and it has forced the primitive civilization to leave the static period and to enter upon the dynamic period."

POPULATION PRESSURE NOT THE SOLE ECONOMIC SPUR. However, there is another kind of pressure, "want pressure," i. e., *the demand for things other than the necessities of life*. Under certain conditions it makes men

"step lively" as much as does "population pressure," i. e., *the demand for the means of subsistence*. The sages judged that hunger "made the world go round"; the poets saw that "hunger and love" did it; the sociologists say "hunger, love, and vanity."

Generally want pressure has not been urgent enough to revolutionize culture, to cause wandering herdsmen to settle down and lead the toilsome life of the cultivator. Even now in many parts of the world the standard of living is so inelastic that if the wages for a day's work be doubled abruptly, the number of working days will be halved. This holds true, for example, of the Spanish-American peons from the Isthmus to Cape Horn. In India, observes the report of the Indian Census of 1921: ¹² "In a large proportion of the population the manner of living has little relation to the economic capacity or resources, actual or potential, of the family or individual. It is determined by tradition and limited by ignorance."

But in enlightened societies population pressure is no longer needed to save people from lying becalmed in the doldrums. It may be doubted if Malthus was right even a century ago when he wrote, "If it were possible for each married couple to limit by a wish the number of their children, there is certainly reason to fear that the indolence of the human race would be very greatly increased." In any case, never were human wants stimulated by so many and so powerful agencies as to-day. Among them are:

1. The spread of the ability to read, making minds accessible to current influences.
2. The enormous development of advertising.
3. The cheapness and effectiveness of illustration.
4. The perfecting of the arts of selling.

5. The weakening of the power of custom.
6. The spread of the desire to live better than one's parents did.
7. The general aping of the style of life of the opulent class.
8. Universal kindling of ambition to rise in the social scale.
9. The spread of the spirit of democratic self-assertion — "I'll show you I'm as good as you are."
10. Literature, fiction, the screen, the shop window, acquaint people generally with the details of the manner of life of the pace-setting classes.

So while, thanks to the spreading practice of birth restriction, the quest for the bare necessities of life is less imperious than it was, the growing desire for comforts and luxuries is taking its place in spurring economic progress.

CONTRAST IN TYPE OF RESULTS. Both population pressure and want pressure enjoin waste and prompt to economy; but the waste and the economy are not the same. The former results in a prodigal expenditure of human time and effort in order to save things; the latter results in a prodigal expenditure of things in order to save human time and effort.

Want pressure is as capable of calling into being a new irrigation system as is population pressure; but in the former case the reclaimed desert is more likely to become vineyards and fruit orchards than grain fields. Want pressure will build up a brisk foreign trade as quickly as population pressure; but in the latter case the incoming ships will be laden with beans, rice, flour, and meat; whereas in the former case they will be full of Cuban sugar, Brazilian coffee, Ecuador cocoa, Chinese tea, or Costa Rican bananas.

Want pressure may cause millions of days' labor to go

into automobiles, garages, hard-surface roads, and summer resorts; population pressure would put it into carving hillsides, into terraces for rice growing, as one sees everywhere in the Far East. Want pressure will keep thousands of square miles of rough land as public parks, national playgrounds, forest reserves, golf links, and grazing lands; whereas population pressure brings under a costly and precarious tillage these areas so ill suited to cultivation.

COMPARATIVE DYNAMIC VALUE. Is necessity "the mother of invention" as the proverb runs? Of practical ingenuity, yes; of true invention, no. It would be nearer the truth to say, "Leisure and intelligent curiosity are the parents of invention." Is it the ant-hill societies which show to-day the greatest output of technical improvements? Which are the quicker to originate or adopt better productive devices, the New Zealand farmers or the East Indian? Which lose less time in turning to account the discoveries of the agricultural experiment stations, the British planters in Kenya or the Egyptian *fellahin*? Which are prompter to work a rich mineral find—the Americans or the Chinese? The truth is, valuable new ideas do not sprout in the minds of overworked coolies wondering where their next meal is to come from, but among well-nourished, unworried persons of an inventive turn. They are first put into practical effect, not by those who need them most, but by moneyed men looking for chances to make a good profit.

Natives carrying earth in baskets on their heads to make a "fill" on an African railway were provided with wheelbarrows to expedite the work. Being paid according to the amount of dirt moved, they had every incentive to double their wages by wheeling the dirt. Did they wheel it? No, they bore the loaded barrows on their heads, for they were mentally unfitted to make proper use of them.

This case exposes the fallacy that the slave under the lash will turn off more work than the free wage-earner.

The fact is that, when population pressure is severe, the masses are likely to be superstitious, custom-bound, and wanting in initiative. Even the proprietors in such a society are afraid to introduce on their properties promising but untried methods, lest a misstep precipitate them into the hell of penury about them. On the other hand, no cultivator is more alert for labor-saving machinery or time-saving short cuts than the prosperous farmer with access to more diversions than he has time to enjoy. It is the ignorant petty peasant, with nothing to put into his leisure, to whom a few hours more or less in the field make little difference.

So, however it may have been in the past, there is now no need of conserving population pressure as a whip to lash us into utilizing the resources of the globe. Eventually these resources will be brought into play under the stimulus of want pressure. Instead of being prodded into activity like a hungry animal by the insistent demands of his organism, man will quit the bed of sloth roused by cravings which have their seat in his memory and imagination.

CHAPTER XVI

POPULATION PRESSURE AND POLITICAL DEMOCRACY

IN thickly settled areas the rearing of a large family will keep most men poor and struggling all their lives. Absorbed in wresting from life the bare necessities, they will not willingly devote any of their petty resources to larger purposes. Hence, there is no other way for a costly permanent source of light or beauty to come into existence than by exercise of the power to tax, i. e., to force the people to give up against their will some of the income which otherwise would go to gratify the current wants of an over-large family. Income thus exacted may be spent by the holders of temporal power, the holders of spiritual power, or by those in whose favor they wield this power. In other words, the only social elements having control of large means will be the princes, the priests, or those who enjoy property rights—in land or in other means of production—which are upheld by princes or priests. There is nothing, of course, to hinder such beneficiaries from squandering their incomes in fleeting sensual gratification or in ostentation which leaves not a trace behind. The typical Eastern potentate—sultan, shah, or maharaja—is notorious for such prodigal expenditure.

HOW SOCIAL WEALTH COMES INTO EXISTENCE IN THE ORIENT. On the other hand, they may choose to bring into being a lasting thing of beauty or a perennial fount of enlightenment. For example, a palace may with its treasures of art give pleasure to several generations of rulers

with their families, retainers, friends, guests, and the nobility generally. A noble temple or church, being public in nature, radiates gratification or inspiration to a wider circle—to all, in short, who share the faith which it exalts. A beautiful civic building or a higher educational institution may mean something in the lives of a still wider circle. Practically the entire community benefit by a bathing beach, a public park, a botanical garden, a zoölogical collection, an art gallery, an athletic field, a national forest, or a pathological institute.

UNDER POPULATION PRESSURE DEMOCRACY WOULD MAKE FOR STAGNATION. But these costly things, elevating human life above the absorbing scramble for physical necessities, will never be created if the toiling tight-fisted millions have to be consulted. The incessant clamorous needs of themselves and their children claim all that they can earn. They are not willing to forgo one stiver of it in order that an enduring source of enjoyment or inspiration may be set up. They will never furnish the means of rearing a noble palace of justice or a cathedral, of creating a public park or a college of science, unless they are *made* to do so by those who wield temporal or spiritual power. In case these power holders choose to call into being such durable social values they are not to be looked upon as mere squanderers of the hard-won coppers of the toilers. What they really are doing is to prevent the demand for subsistence from swallowing up practically all that the people produce. But for them the unthinking masses would pour all the produce of their toil into the hopper for grinding out numbers.

No doubt their exactions *do* make life harder for many; perhaps they augment the general death-rate or add to the mortality of children. But in the absence of such exactions the people would only multiply the faster; so that soon

their struggle for existence *without* temples, schools, and parks would be just as stern as it now is while contributing to the cost of temples, schools, and parks. Without taxation there might be a population of ten millions; bearing taxation, a population of nine millions. Instead of a tenth million, there is, thanks to the exercise of the taxing power, a building up and maintaining of institutions and activities which diversify, dignify, and ennoble human life.

POPULATION PRESSURE A FOE OF THE CONSERVATION OF NATURAL RESOURCES. Furthermore, when the food struggle is sharp, the people will resort to practices which tend to wreck their national home and mortgage the social future. For the sake of a few extra mouthfuls they kill every bird they can, with the result that insect pests multiply and devour their crops. They exterminate the game. They take fish so greedily that their fisheries disappear. They lay waste the native forests, so that posterity knows not whither to turn for wood and fuel. In frenzied quest of land to grow food on, they denude and cultivate the steep slopes; presently these slopes are stripped of soil, while the rivers, choked with silt, are no longer navigable. Government as far-sighted guardian of the national future should check such suicidal practices; but no government will be clothed with the needful authority if it is really under the control of the hard-pressed millions it ought to restrain. Would a people-ruled government have brought one fifth the area of British India under the Forest Department?

POPULATION PRESSURE UNFAVORABLE TO PUBLIC SPIRIT. The disappointing outcome of the attempt to operate a representative government in China since the revolution of 1911 is most instructive. The root cause of the fiasco appears to be the greed of grain which governs the conduct of most Chinese in public life. This avarice is no

race defect. According to Bland it is "a direct product of a struggle for existence far more severe . . . than anything in the history of European nations. And nothing can possibly mitigate the fierceness of this struggle, no political institutions can ever modify the qualities and defects which it produces, so long as the social system of the Chinese continues to make philoprogenitiveness a religious duty. Ancestor worship combined with the polygamous patriarchal family system has produced a state of society in which every man will, if he can, raise himself and his immediate posterity above the level of the masses, forever struggling for the bare necessities of existence." ¹ Norton, too, points out that the man who is scrupulously honest in the handling of his family affairs, in office feels that "his primary duty is to accumulate for his family. In his mind the right of his family to monies on which he can lay his hand is far superior to the right of any vague abstraction such as the public or the country." ²

PEOPLE-RULE NOT LIKELY TO COME SOON IN THE ORIENT. Since the hard-pressed are loath to submit to the restraints which conserve natural wealth or to make the sacrifices by which alone social wealth is built up and extended, the grant of a wide suffrage is no blessing in an overpeopled country. Indeed, there is good ground to fear lest under political democracy the higher and more enduring interests of society suffer. Hence, the arrival of genuine popular control over government is likely to be greatly delayed in the "man-stifled" Orient.

At first the intellectuals of the East urge their people to adopt Western political institutions in the belief that they contain the secret of the preëminent power and riches of the Western peoples. But before long their sages will dis-

¹ J.O.P. Bland, "China, Japan, and Korea," 1921, pp. 82-83.

² Norton, "China and the Powers," 1927, p. 180.

cern that democracy is consequence rather than cause of this envied superiority. Growing doubt and opposition on the part of the thoughtful will cause the political gains of the masses in the Orient to be slower than many anticipate. Even after popular ignorance and illiteracy of a depth we can hardly imagine are overcome, it will not be possible for the Eastern peoples to be masters in their own house, as are the Norwegians or the New Zealanders, until they have advanced a long way toward the comfort and independence which these peoples enjoy.

CHAPTER XVII

POPULATION OPTIMISM

ORDINARY ill educated, home-staying people resent having the truth about human increase brought home to them. They balk at recognizing the calamitous outcome of careless breeding as our forefathers, a century ago, balked at recognizing the demoralizing effects of careless almsgiving. Just as the economists then seemed to slur "sweet charity," so now the sociologists seem to slur "wedded bliss" and ignore the ineffable charm of childhood. Years ago in Foochow I spent an evening with a Chinese scholar of the old type, an orthodox Confucian. Although evidences of extreme population pressure shouted at him from all sides, he was utterly impervious to the idea—so alien to the thinkers of China—that *population tendency is one of the chief factors in determining the plane on which the masses live*. As I confronted him with the damning facts he twisted and sidestepped, appealing to such comforting popular saws as, "One more bowlful out of a rice tub makes no difference," "There is always food for a chicken" (baby), "An only son will starve" (i. e., will be a ne'er-do-well). Or he would seek to prove that numbers do not impoverish by citing big villages he knew in which the people are better off than in neighboring little villages!

"HOLY SIMPLICITY." Take the fine people of pioneer stock in the Appalachian highlands of the United States. They have an annual birth-rate of 35 to 40 per thousand,

which puts them in a fertility class with the Balkans and French Canada. Italy, Bavaria, and Japan are quite out-classed in prolificacy by Swain and Haywood and Ashe counties of North Carolina. On a foot tour through this charming sylvan region I asked scores, "How many were in your father's family?" Seven was the lowest figure mentioned. Eight was the most frequent, but the number ran up to fifteen. Hardly a front stoop but showed three or four towheads less than six years of age.

I asked an old mountaineer with the brow of an Academician, "How many children in your father's family?"

"Fifteen."

"And how many have *they* had?"

"Oh, more than a hundred!"

A child a year is a common schedule for the young wife. Children are coming as fast now as they did a century ago. Everywhere else in the country some couples limit their families; but the practice is unknown among the mountaineers. Since few of the babies die, the mountain folk increases rapidly and population pressure is rising. Said a well-off farmer of seventy years, "The farm I inherited had 225 acres, of which 45 was in cultivation. Now there are ten families on it, and 150 acres are in cultivation."

Year by year the ax clears the steeper slopes and the plow tears them open. Hence the mountain streams, which within the memory of man ran crystal clear, are turbid, while, between floods, their flow is but a third of what it once was. Up a two-mile "branch" you may find twenty to thirty farms, becoming more Lilliputian as you mount to the head of the branch where the valley has narrowed to a ravine harboring a rural slum. I learned not to stop overnight at the bare cheerless huts high up but to descend to where the valley is a furlong wide and the houses offer some comfort.

No highlanders I spoke with suspected that a population which triples itself in every generation is bound for trouble or doubted that the begetting of housefuls can go on to the end of time. To be sure, they complain that the farms are more cramped, the fields steeper, the cabins closer and meaner, the streams fouler, and the larders leaner than in their parents' day; but never do they connect these ills with the swarms of towheads that have filled the cabins for a hundred and fifty years. Visibly penned in by mountains they should realize, you would think, that couples cannot go on forever averaging eight or ten children. The early filling of the valleys should be as evident to them as that a tank into which water runs faster than it leaks out will some day be full. But no, like the Chinese, they hold their eyes tight shut before the real cause of their growing poverty.

WHY THE TRUTH ABOUT POPULATION IS HATED. Such wilful blindness springs, I suppose, from a horror of admitting that innocent and appealing acts like begetting and raising children can work like a curse. It is easy for us to believe that misery flows from indulgence in *ugly* passions—such as anger, revenge, envy, or greed; but the doctrine that woes just as dire can issue from wedded love, or fondness for lambkins at the fireside, outrages our holiest feelings. Rough, ignorant, hard-working folk, to whom love and children are the sweetest flowers of our earthly existence, find revolting the idea that a people may sink into a horrible quagmire of toil and want and care simply from the practice of “taking no thought for the morrow” but bringing into the world as many children “as God sends.” So they spit upon it and follow those who exhort them to go on and beget offspring “to the glory of God.”

SCOFFERS AT POPULATION TRUTH. Their mentality is

that revealed in the answers of some London parents to the notification by school doctors that their children's teeth or eyes were in need of attention.¹

One says: "I desire my daughter's teeth to remain as they are. The same Power that placed them there, will make due change when necessary." A mother writes, "Father has had toothache all his life, so the child will have to put up with it." A parent writes: "Squint is God-given. It is wrong to tamper with it." These recall the reply of a Kentucky mountain mother when warned that her boy's adenoids ought to be removed: "I reckon on burying him with all his natural parts."

To such minds birth-control seems a profanation, a wicked interference with "God's will" or with "Nature's way." They find it more horrifying than the specters of pestilence and famine, which, being Biblical, are familiar. As for war, it has been so gilded with romance that they would rather see surplus population swept away from time to time by the besom of war than prevented by contraceptive practices. Such persons are by no means zanies, but simply ignoramuses whose strong religious or esthetic feelings inhibit them from drawing rational conclusions from facts.

The fact is, in the world to-day there is no dose of new truth so hated as the laws of population growth. It offends more than the proposition that our distant ancestors were savages, hardly gardeners in Eden. It is more distasteful than the doctrine of our descent from lower types of men. It is an even bitterer draught than was the denial, a century ago, that the man is the natural God-appointed head of the family. It is harder to swallow than the teaching that children have rights as against their parents and are

¹ "Daily Chronicle," December 3, 1926.

not under an infinite debt to those who—quite casually perhaps—bestowed upon them the boon of life. Population truth will long be wormwood to the ill informed and muddle-headed who have settled into a sentimental attitude toward sex and family. It is the alert, rising generation, avid of the truth and scornful of prejudice and cant, that will harken to the findings of the experts on population.

THOUGHTLESS OPTIMISTS. In 1921 the President of the United States noticed in a Sunday newspaper the picture of Mr. and Mrs. Z. of New York City and their sixteen children; whereupon he wrote to Mrs. Z. congratulating her upon being the mother of such a splendid brood. Amiable? Yes. But did it strike a note which needs to be struck? The father of this family is a low-paid porter, and there is no sign that the couple have rare gifts to pass on to their children. By complimenting them the President encouraged our millions of commonplace citizens to court the gratitude of their country by begetting families of sixteen children! Yet we fill two cradles for one coffin!

One L. G. of Georgia, whose sole title to distinction is the begetting of twenty-eight children, has just been introduced (1926) at the White House and presented to Congress. He is credited with the remark, "Now this birth-control business is all bunk; the only happiness in life is to have children—as many as you can." Then North Carolina, not to be outdone, seeks out and sends to Washington for similar honors one R. B., the father of thirty-four children by two wives. Fatuous gratulation of these super-fathers. No inquiry as to the value of their progeny to society and to the race. No concern as to the lot or fate of the women who bore them. No care whether they wanted so many, or were victims of selfish sensual hus-

bands. This bestowing on cheap fatherhood the honors that should go to dear motherhood shows the mental caliber of the population fatheads.

A well known British eugenicist after a brief visit to Canada declared before the Royal Statistical Society of Britain that, although Canada has only eight and three quarters millions (now nine and one half) of inhabitants, "it would hold several hundreds of millions of people." Hold them? Yes. But feed them? Agricultural experts think that Our Lady of Snows will do very well if some day she supports sixty million people.

Eight and one half centuries ago a Chinese scholar, opposing the extension of government credit to farmers, wrote: "The harvest of the soil is just like the grass and wood on the mountain. The mountain will grow grass and wood just as fast as men can use them. The productive power of the universe is always in proportion. How can it be true that the population will be greater than the supply of land?"

This fallacy of a preëstablished harmony is very old and tough. We meet it in the pious reflection that, since with every mouth that comes into the world God sends two hands, there can never be true overpopulation. But who can guarantee that every new pair of hands in a full country will find a handhold? Consider the province of Hunan in China. Sixty years ago half the population was lost in the Taiping Rebellion. Since then the depopulated areas have gradually been repopled. Naturally, the easily irrigated lowlands were the first to be reoccupied. Then the farmsteads crept up into the foot-hills and, by building a water-capturing barrier across every gulch and impounding practically the entire rainfall, they carried the cultivation of rice far up the slopes. Finally, late comers take to tilling rice so near the hill-crests that only during

favorable years is the rainfall sufficient to produce a substantial crop. An average year brings forth only a bare subsistence; a sub-average year, nothing. The ordinary fluctuation of seasons, therefore, will produce a famine upon the hilltops of Hunan.

Where, now, is your "pair of hands" argument?

P. Kropotkin, the great Russian humanitarian, writes: ²

Those only can be horror-stricken at seeing the population of a country increase by one individual every thousand seconds who think of a human being as a mere claimant upon the stock of material wealth of mankind without being at the same time a contributor to that stock. But we who see in each new-born babe a future worker, capable of producing much more than his own share of the common stock, we greet his appearance.

Generous, to be sure, but does not the babe have to be supported about sixteen years before he ripens into a worker? Then how if, when he undertakes to produce his own food, there is no unoccupied land for him to grow it on but tenth-rate soil? Or there is no free land at all, and he must somehow force land already tilled to a still higher productiveness!

Fools think to save us from the wrath to come by showing how cheaply we might subsist. "*Potatoes*," exclaims a rapt Briton, "*will feed 420 persons per 100 acres, while grass, turned into beef, will feed only 15. . . .* Not only does this wonderful vegetable surpass all else in its power of food production but its qualitative value is very high. It is mighty good eating and we do not tire of it." ³

This enthusiast forgets what happened in Ireland. At the beginning of the eighteenth century the Green Isle had just over a million people. The introduction of the

² "Fields, Factories, and Workshops," 1899, p. 130.

³ "The New Statesman," Vol. XXII, p. 538 (February 16, 1924).

potato encouraged a rapid increase, and by the middle of the century the population was two and a third millions; in 1805, 5,359,000; in 1823, 6,802,000; in 1841, 8,175,000. Then in 1845-46, when one half of the Irish subsisted on potatoes, came the potato-rot, and population fell off a fifth in five years.

Nor does he see that a meat-eating people in a bad season can escape famine by eating their animals and then eating the vegetables which would have been fed to these animals. *They have something to fall back on.* Likewise a people with a high standard of living can in a bad year quit all outlay for comforts and concentrate their shrunken purchasing power on importing the necessities of life. This is why such a people is not turned into paupers by one failure of the harvest, as is a population which has stuck to the simple life.

BAD DREAMS. A quarter-century ago an eminent German economist ⁴ thought to give Malthus his finishing stroke by showing that as population expands it can be fed on vegetables grown in glass hothouses. After elaborate calculations on the basis of the produce of out-of-season vegetables for the London market in the hothouses of the Channel Islands, he concludes that *upward of two hundred billions* of human beings can be fed from our planet. In order not to trench on the soil under glass, all residences would have to be built on stony or barren land. Of course, when the earth is full, it will be necessary to curb human fertility; but that date is thousands of years away. "So little as mankind worries over the cooling of the sun or the earth falling into the sun, so little has it to worry over eventual overpopulation."

Lovely picture, isn't it? A world of barracks and hot-

⁴ Franz Oppenheimer: "Das Bevölkerungsgesetz von T. R. Malthus und der neueren Nationalökonomie," 1901, p. 151 ff.

houses—as charming as a prison yard. No accessible forests, no clear perennial brooks, no shade-trees or hedgerows, no lawns or pastures, no parks or meadows, no wild shrubs or flowers, no game, no domestic animals, no pets. Nothing to feed the instincts of a creature of woodsy origin. Endless millions of human beings as alike as shoe-pegs! And all for what? Why, just to put off the day of family limitation, which, he grants, is inevitable! If it has to come in the end anyhow, why such a pother to delay it?

ROSY ANTICIPATIONS. After this, surely, no dream of the population mystics can astonish us. So we are not staggered by the prophecy of an American scholar a few years since: ⁵

It is quite conceivable that before this generation is past we shall plow with power generated by the tide and transmitted by wireless processes, and that radium will be harnessed so that its incalculable energy can be used. With the tremendous increase in power the surface of the earth can be enlarged indefinitely. Why should not the plains of Europe and America be set on edge, or why should not artificial light and heat make possible several layers of productive soil, and certainly it can be employed all the year around!

Nor do we marvel at “economists of the Micawber type who admit the increasing pressure of population on the world’s food supply, but predict that something will assuredly turn up in time to prevent mass starvation. . . . They would have the world eat, drink and be merry leaving the next generation to fight its own battles by the aid of ultra-violet rays or synthetic foods produced *ad infinitum* out of thin air.” ⁶

⁵ In “Popular Science Monthly,” Vol. LXXIX (1911), p. 600.

⁶ J.O.P. Bland, Sixth International Neo-Malthusian and Birth Control Conference, 1926, Vol. III, “Problems of Overpopulation,” p. 6.

Wittily comments Professor A. B. Wolfe upon these anti-Malthusian optimists: ⁷

They see vast empty spaces. The State of Texas, especially, appeals to their imagination. Most of them have never been there. They do not study the rain map, the temperature chart, or contour intervals. They have a naïve faith in mechanical progress. For them, invention will "set aside" and "indefinitely postpone" the law of diminishing returns. Progress will find a way. Man is master of his fate. Thus we are invited to soar into the lyrical regions of "two-story agriculture" and to listen to the music of solar engines throbbing in the white sunlight of the deserts.

"SAVING LIFE" IS SOMETIMES AN OPTICAL ILLUSION. When the ruthless old dowager empress of China was in a tender mood she would buy caged birds from the market and set them free. She was not economist enough to realize that by her purchases she was stimulating the bird snarers in Shantung. The impression that by building up a great Union Medical College in Peking to turn out modern doctors philanthropic Americans are saving Chinese lives seems to involve a similar fallacy. The unseen cancels the seen. Inasmuch as checking disease does not add to the food supply, inasmuch as the Chinese are as many as their land can feed with their methods of cultivation, it follows that saving some Chinese lives from disease but adds to the pressure somewhere else and on somebody else. For the real limit to the increase of the sons of Han is not disease but the *intensity of the struggle for subsistence*, reflected in over-early or excessive toil, hard conditions of living and poor nourishment.

Foiling diseases which have been carrying off a million a year, should, other things remaining the same, leave

⁷ L. I. Dublin, "Population Problems in the United States and Canada," 1926, pp. 66-67.

alive more people to enjoy longer life. But in a population stabilized by pressure, *other things will not remain the same*. Since the soil is feeding all it can, as now utilized, if foreign medical skill blocks certain exits from life, more lives must pass away through other exits. Other diseases break out or else famines become more frequent and devastating. In a word, there is risk in tampering with the equilibrium which has been attained by a blindly breeding population. Unless you can cut down the number of births or raise more food, your saving of lives is largely illusory.

When, during the last great famine in North China, the foreigners took the initiative in making plans for famine relief work they at first encountered a surprising apathy toward the project on the part of the Chinese of the old school. Finally the Celestials explained their position. "What do you foreigners think you are doing?" they asked. "China has not enough food to go around as it is, and it is only through famines that we get relief. We have to have them periodically in order that there may be enough for the survivors."

CHAPTER XVIII

THE POPULATION BOOSTERS

SOME years ago the Paris journal "L'Intransigeant" published the names of the persons most prominent in the French campaign for larger families and in each case gave particulars as to the number of children. Of the 445 married couples concerned, 176 were childless. Only 75 had more than two children, the average number being $1\frac{1}{3}$. The report adds that "every single one of these couples could more easily have supported 20 children than a working-class family a single child."

It may be, of course, that these gentlemen, so forward in urging people to have more children, are not to blame for their low fertility. But the figures certainly raise a suspicion that many of them have been limiting the size of their families by the very means which they denounce the working-man, the peasant, and the petty functionary for using.

Why, in countries long settled and well peopled, groups of persons who cherish not the least intention of burdening themselves with a large family should raise a clamor for more babies can be understood only after one has analyzed their special interests in the growth of population.

THE NATIONALISTS. Those who are much exposed to foreign opinion become *nation-conscious*, i. e., sensitive to the kind of figure their nation cuts in the eyes of the world. They find great satisfaction in belonging to a coun-

try of supereminent power and prestige. Since numbers are one basis of economic, financial, and military strength, they cry out for a more rapid growth of their people. Beside them stand the militarists cynically demanding an abundance of "gun fodder," the raw material of victory. Both types pose as "patriots"; but when the acid test comes they show no greater readiness to die for their country than the simple peasant whose heart is in his homestead.

These self-styled "patriots" would have millions of their fellow-citizens live wretchedly and without hope in order that their nation may play a grand rôle. Thus a French nationalist complains: ¹

In 1770 in the civilized world the French were 1 in 4; in 1850, 1 in 10; in 1913, 1 in 25; and in 1945, they will be no more than 1 in 50.

In the last dozen years before the World War, while Italy gained more than 3 millions, the United Kingdom more than 4 millions, Germany more than 9 millions, France gained less than a million.

We abandoned Egypt to English influence and our efforts to extend our Colonial Empire met with the astonishment and ill will of our rivals who would not admit that a people which no longer has children could dare dispute their "place in the sun."

In 1871 our population was only 5 millions less than that of Germany. If the French population had grown at the same rate as the German population we should in 1913 have had 61 millions instead of 39 millions and Germany would never have dreamed of attacking us. So the War is the price France had to pay for her sad refusal to "increase and multiply."

Being more numerous we should necessarily have been more active, more enterprising, bolder; we should not have let others take the places which are ours by right; we should have colon-

¹ V. Giraud, "La Crise de la Natalité," "Revue des Deux Mondes," March 15, 1924.

ized our own colonies. Our economic and commercial power would have been more developed. Being richer, we should have discouraged rival ambitions, our military strength would have imposed on the boldest respect for the French name.

Behold the "patriot" mind! Blindness to the fact that France is already thickly peopled and well cultivated; the naïve idea that to realize a greater France all you have to do is to induce couples to have more children, for raising them will be simple; not a word as to how twenty-two million more people are to wrest a living out of France; no realization of the physical misery, the abject poverty, the lengthening of the labor day, the shortening of life, the overcrowding, the weakened health, the greater infant mortality, the increase of child labor, the curtailed schooling, the greater illiteracy, the lower consideration of women, the diminished independence and self-respect of the working class—which would have flowed from a cradle competition of the French with the Germans. These property-sheltered "patriots" would sentence myriads of their fellow-countrymen to an earthly hell, if only their egos may swell with the pride of national dominance. Outside their own social class they see only workers, soldiers, and taxpayers, not human beings athirst for happiness.

THE IMPERIALISTS. Once an empire has been built up, a cry is lifted for more population to maintain the domination of the "imperial race" over "natives" ever more numerous and self-assertive. This *motif* is very clear in the second report of the (British) National Birth-rate Commission.²

. . . The indications are that in the Homeland the population may not continue to increase, while in the Dominions over-

² "Problems of Population and Parenthood," 1920, p. lxxiii.

sea, without the aid of immigration, it will not at the present rate increase greatly, at least from additions of the British stock. We have the greatest area of responsibility in the world, one-quarter of the whole earth, and it is still growing, but we are leaving it sparsely populated, though in it there is ample room for all whom we can spare from their places. All these enormous lands, with their countless native races, we hold with under 60 millions of white people, of whom 45 millions dwell in these little islands.

So keep up in the homeland a population pressure intense enough to squeeze out constantly a broad stream of emigrants to the Dominions. But really is there a sacred obligation resting upon the British to manage "one-quarter of the whole earth" and to govern "countless native races"? With what Homeric guffaws the captains who gathered up the territories which make up the Empire would have greeted the idea that every time they planted the union jack in a new place they were cutting out work for British mothers!

THE CLERGY. Nowadays the religious denomination gathers few recruits from the unchurched or from the folds of other churches; for the most part it grows from the children of its communicants. Accordingly the old-fashioned clergyman, whatever may be the private expedients of him and his wife, rejoices when his parishioners have large families, and feels aggrieved with those who present but three or four children at his baptismal font. Preachers who identify their egos with the power and consequence of the religious body they serve feel that all is well when the pews are full, the Sunday-school is crowded, and new church buildings rise. Swarms of children guarantee that their denomination will hold its own in the competition among the sects; so they hurl ecclesias-

tical thunders at the poor forspent pious wife who rebels at being casually loaded down with a dozen children by her selfish husband.

THE BUSINESS MEN. Everywhere among us the organized business men do all they can to speed the growth of their town. In new-comers they see so many more customers or patrons to make a profit from. The citizen who voices ugly truth about his town is called "knocker" and quickly squelched as traitor to the game of attracting population. From the "boomer" claptrap which fills the newspapers you would infer that room is something to get rid of as soon as possible. While wise men are moving miles out for the sake of elbow-room, the poor fools who swallow whole the chamber-of-commerce propaganda think that there never can be too many people. This delusion is worst in a young country like ours because, in an early day, the sooner settlers occupied a new region, the sooner there were courts, police, roads, schools, churches, and good society. The frontier attitude of welcome persists after the region is settled and more people no longer mean more prosperity and a better life.

The feeling of business men about the expansion of the community by big families is the same as about its expansion by immigration. The babies will not be customers so soon; that is all.

THE CAPITALISTS. The owners of every form of natural wealth see their properties more quickly appreciate if population grows rapidly. Country landlords are gladdened when the competition of would-be tenants bids up the rental of their farms. City landlords find their rent-rolls lengthen as a result of urban growth. The more of a mushroom the city, the sooner down-town lots will be worth a fortune per front foot. The profits of the owners of forests, water-power, coal deposits, ore beds, oil lands,

and waterfront rise as the consuming public waxes. Obviously the true policy for an ambitious proprietary class is to avoid having many sons to share the family fortune among and at the same time to encourage proletarians to have large families whose expanding needs will confer more value upon their properties.

THE EMPLOYERS. Family limitation by the workers lessens the number of wives and children forced into the factory and spares the worker the necessity of taking the first job that offers. It raises wages at the expense of profits and hence is anathema to the hiring class. Employers yearn for a crowded labor market, which provides them all the labor they can use in brisk times, and, in ordinary or bad times, causes a competition for employment which gives them the whip-hand. In France, in 1916, the chambers of commerce, "impressed by the dangers a low birth-rate offers for industrial and commercial enterprises owing to the scarcity of hand labor, employees, and clients," took the lead in convening the annual Birth Congress.

Thanks to the political domination of this class, three million foreign workers have been admitted to France—eight hundred thousand Italians in the years 1921–24—thereby depriving the French working class of much of the benefit from the lowering of population pressure in France owing to her small-family system.

THE SOCIALISTS. But why do not the socialists, who love to show up bourgeois sophistries, expose this cant? The fact is, Malthus pricked the pretty soap-bubbles of the early communists; so the tradition sprang up that Malthus is a "capitalist" thinker. Again, in the bad old days, every gang of exploiters hid behind Malthus. His analysis helped them argue that the poor had only themselves to blame for their plight, and that there is therefore

no necessity of shifting the burden of taxation toward the rich, or reforming land tenure, or breaking up the great estates, or passing factory acts, or pursuing housing reform, or giving the worker the ballot and the right to organize, and providing his children with schools and playgrounds. This misuse of Malthus's doctrines made them such a stench in the nostrils of the early radicals that to admit the possibility of overpopulation was taken as a betrayal of the cause of the working class.

Socialist prejudice against everything bearing the name of Malthus delayed by many years the spread of population truth among those of scanty income. Recounts the venerable Dr. C. V. Drysdale, founder in 1876 of the Neo-Malthusian or Birth-Control Movement:

Immediately the Malthusian League was founded a campaign was at once launched among the working classes who received it with enthusiasm. But within a few months it was absolutely frustrated by the Socialists who claimed that it was a pretext for making the people content with their lot instead of agitating for their "rights" and that if the people would espouse socialism and work for the revolution, they would obtain all they needed without limitation of their families. Their success was so complete that it was impossible to obtain audiences for birth control meetings, and the scheme had to be abandoned for nearly forty years, when the failure of Socialist promises led the people to listen to us again.

THE EXPOSERS OF THE BOOSTERS. So on all hands we see hypocrites who "lade men with burdens grievous to be borne," yet "touch not the burdens with one of their fingers." Most of the influential are in a tacit conspiracy to cajole the masses into rearing children in the interests of the classes. In Carver's phrase, "The foxes recommend large families to the rabbits!" In France notables and dignitaries who would not dream of loading their wives with

an unlimited family gather to cheer and bestow a gold medal upon a worn, wan, pathetic working-class mother of ten children who has seen nothing, read nothing, enjoyed nothing, and whose life has been little better than a long martyrdom. However, there are little knots of people who hate fraud and try to unmask the big-families-for-other-couples movement.

Knowing the laws of human increase the *scientists* become irate at the scheme to persuade the poor that two and two make three, and find satisfaction in puncturing the gaudy toy balloons of the populationists. The *feminists* are indignant at seeing males band together to dupe poor women into sacrificing life or health or happiness to feed the pride of nationalists or fatten the purses of business men. The *social workers* warn that there will be no drop in the endless stream of defectives and dependents until society discourages rather than countenances large families among those unfit for worthy parenthood. The *anti-militarists* fitly characterize warfare as a barbarous method of relieving civilized peoples of the evils of overpopulation. Finally, the *humanitarians*, concerned for the welfare of all rather than for the enrichment or aggrandizement of certain classes, contend that no one thing would so much contribute to human happiness as the maintenance of population at the *optimum*, which implies the reduction of population pressure to zero.

CHAPTER XIX

THE RISE AND SPREAD OF AN ADAPTIVE FERTILITY ¹

OWING chiefly to the discovery of practical methods of birth-control the last half-century has witnessed nothing less than a revolution in the vital history of Western Europe, the United States, Canada, and Australasia. This revolution is destined to spread over the earth in time, relieve population pressure, and pave the way for a universal sharing of the blessings of civilization. The discovery of means of birth-control may well prove even more momentous in the life of humanity than the discovery of the germ origin of disease. In most European countries save France birth-rates remained at the old figure during the first three quarters of the nineteenth century. Since Azrael was constantly being driven back the result was an immense growth of population. In 1877, after the notorious trial of the "Neo-Malthusians," Charles Bradlaugh and Mrs. Annie Besant, for republishing Dr. Knowlton's "The Fruits of Philosophy" (which first saw the light in Boston in 1833), the birth-rate began to fall in England and has been falling ever since. It is now but the half of what it was about 1876.

Declares Miss Elderton: ²

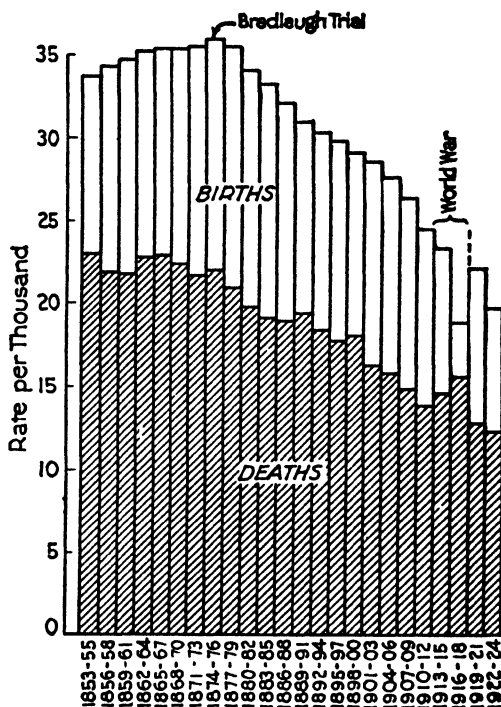
A great industrial boom . . . had given all classes of the community not only a higher standard of ordinary living but

¹ "Eugenics Laboratory Memoirs," XIX and XX. "Report on the English Birth Rate" (1914), p. 234.

² I say *adaptive fertility* rather than *birth-control* because it is more certain that fertility will somehow be *adapted* to the situation which a

an acquaintance with "luxuries" which became necessities. Where depression followed the problem arose as to which of the least necessary things should be dispensed with. The child,

1- BIRTHS, DEATHS AND NATURAL INCREASE IN ENGLAND AND WALES
By Three-Year Periods - 1853-1924



owing to factory and educational legislation, had become more and more a protracted source of expenditure; the moral leaders of the people had taught that the parents had "no right" to

people confronts than that "birth-control" (contraception) will be the method employed. Researches now going on in various laboratories bear every promise that within a short time the attainment of absolute and perfectly healthy temporary infertility on the part of women will be as simple as taking a headache tablet.

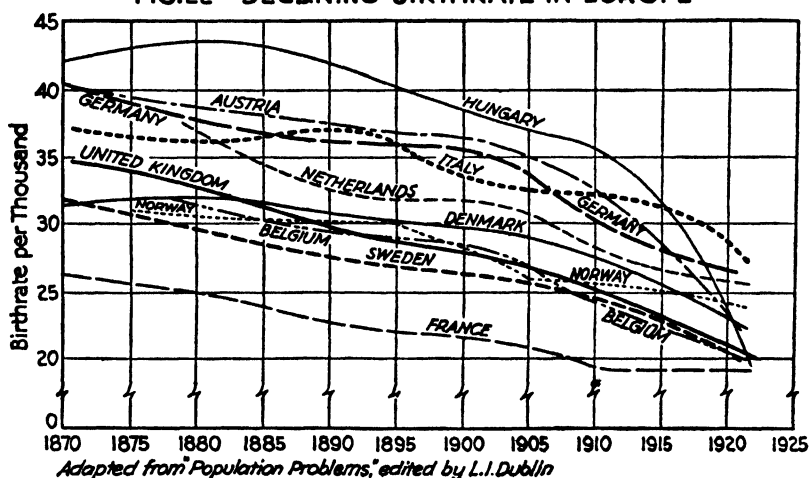
children unless they could support them, and this theory had replaced the old evangelical doctrine that: "It is God who sends children and He will in due course provide for them." The better class workman began to understand that his progress as well as his comfort were handicapped by a large family. At such a moment the propagandism of Bradlaugh and Besant for the limitation of the family and their demonstration that marriage and parentage were separable struck fruitful soil. The gravity of the trial, notorious as it was, was far from recognized at the time; it legitimized the teaching of practical methods for the limitation of the family, and within thirty years that teaching has revolutionized the sexual habits of the English people.

In the course of the eighties, knowledge of the art of birth-control had become sufficiently disseminated in Belgium, Holland, and Switzerland to make the national birth-rate sag. In Australia it was again a court trial, the famous *ex parte* Collins, which in 1888 spread far and wide among the people a knowledge of the existence of simple methods of regulating the size of the family. The next year witnessed a fall of 6 per cent in the birth-rate of New South Wales. Within a decade the drop amounted to 27 per cent.

Just before the close of the nineteenth century Scandinavia, Finland, Italy, and Hungary fell into line. In Germany and Austria laments over "our declining fertility" began to be heard by the middle of the first decade of the twentieth century. By the close of the pre-war period, in all Europe only Russia and the Balkans continued to produce infants at the old-fashioned rate of 40 to 50 per thousand per annum. Since the hurricane of the World War the waves have not sufficiently subsided for us to judge what new levels of fertility are to prevail in Europe. It is highly significant, however, that the German birth-

rate hovers near to 20 per thousand—about that of France—and that the schools for the lower classes in all the big centers are attended by about half as many children as before the war. On the whole it is safe to say that annually two and one half million fewer births now take place in Europe than would occur if the birth-rates of 1876 had been maintained.

FIG.22- DECLINING BIRTHRATE IN EUROPE



EUROPEAN AND AUSTRALASIAN EXPERIENCE. The trend since the decade 1876–85 has been exhibited in striking fashion by Sir William Beveridge.³ In interpreting these tables he remarks:

The bracketed numbers after the names of certain countries give the numbers of years covered by the statistics before 1876 (column 4).

The numbers in column 5 (1881) and column 6 (1911)

³ "The Fall of Fertility Among European Races," *Economia*, March, 1925.

represent as a rule the averages for the decades 1876-86 and 1905-15 respectively.

The numbers in columns 2 and 3 are taken from the censuses nearest to 1900. The seventeen European countries had in 1900 a population of 232,600,000. The averages for the European countries as a whole are weighted by the total populations of

TABLE I—FERTILITY OF EUROPEAN RACES AT CERTAIN PERIODS

1 Country	2 Inhabitants per sq. km. (1900)	3 Percent- age of Catho- lics (1900)	4 5 6 Legitimate births per annum per 1000 married women, aged 15 to 49			7 Column 6 as per- centage of Col- umn 5
			Before 1876	About 1881	About 1911	
Ireland (10) .	52.9	74.2	260	250	247	98.8
Italy	113.4	97.1	...	248	226	91.1
Austria	87.2	91.0	...	246	219	89.0
Finland	7.2	.0	...	259	230	88.8
Norway (30) ..	6.9	.1	255	262	224	85.5
Hungary	59.2	61.1	...	234	198	84.6
Sweden (120) .	11.4	.0	240	240	196	81.7
Holland (30) ..	154.3	35.2	286	291	233	80.1
Denmark (20) .	62.9	.0	226	244	191	78.3
Bavaria (10) .	81.4	70.6	282	276	214	77.5
Switzerland ..	80.3	41.6	...	239	184	77.0
Prussia (10) ..	98.9	35.1	271	273	204	74.7
Scotland (20) .	55.9	?	276	271	202	74.5
Württemberg ..	111.2	30.0	...	288	211	73.3
France (30) ...	71.7	?	174	167	116	69.5
England and Wales (30) ..	215.2	?	246	250	171	68.4
Belgium (30) ..	227.0	?	266	264	161	61.0
Saxony (10) ..	280.3	4.7	262	267	153	57.3
Average (Weighted by total popula- tion)	....	...	(230)	238	189	79.4
New South Wales (20) ..	1.7	25.3	306	300	205	(69.2)
Victoria (10) ..	5.3	21.8	266	260	189	(73.7)
Queensland ...	.3	23.8	...	311	214	(72.0)
New Zealand .	2.9	13.9	...	284	188	(67.6)
Average (Weighted by total popula- tion)	....	...	(287)	283	198	70.0

1861, 1881, and 1911 respectively; those for Australia and New Zealand in 1856, 1881, and 1911.

The bracketed figures in the last column, for the four Australasian countries, are based on births per 1000 married women 15 to 44, not 15 to 49. The mean of those four figures weighted by 1900 population is 70.9, i. e., practically the same as the 70.0 obtained by using the age limits 15 to 49.

. . . The point of the table lies in comparing the fertility about 1881 (column 5) first with that before 1876 (column 4), and then with that about 1911 (column 6). The first comparison shows that fertility about 1881 was nowhere markedly different from that experienced in the past; a little higher than usual in some countries, and a little lower in others, it stands for all countries taken together practically at the previous average. The second comparison yields a strikingly different result. With the single exception of Ireland, every country shows, in the thirty years that separate the epochs, a substantial fall of fertility; the average fall for all the European countries is 21 per cent, and for the Australasian countries is 30 per cent.

TABLE II—EUROPEAN FERTILITY: LEGITIMATE LIVING BIRTHS PER ANNUM PER 1000 MARRIED WOMEN, AGED 15 TO 49.

Period	Sweden	England & Wales	France	Belgium	Holland	Prussia	Bavaria	Saxony	Ireland
1756-1765	251	...	...	...	...	...	...	...	...
1766-1775	240	...	...	...	...	...	...	...	...
1776-1785	242	...	...	...	...	...	...	...	...
1786-1795	245	...	...	...	...	...	...	...	...
1796-1805	232	...	...	...	...	...	...	...	...
1806-1815	232	...	...	...	...	...	...	...	...
1816-1825	253	...	...	...	...	...	...	...	...
1826-1835	240	...	...	...	...	...	...	...	...
1836-1845	235	...	...	...	...	...	...	...	...
1846-1855	241	242	179	252	(294)	...	...	...	...
1856-1865	248	244	172	276	(285)	...	...	...	...
1866-1875	235	252	172	270	(292)	271	282	262	260
1876-1885	240	250	167	264	291	273	276	267	250
1886-1895	231	229	150	236	284	265	263	250	245
1896-1905	219	203	134	213	270	250	259	216	267
1906-1915	196	171	116	161	233	204	214	153	247

The second table, headed "European Fertility—Legitimate Living Births per annum per 1000 Married Women aged 15 to 49," gives similar figures for certain countries decade by decade, from the earliest time for which such figures are available. It shows in nearly every country slight fluctuations about the same level to 1876–85, a fall beginning immediately thereafter and continuing from decade to decade with ever increasing speed. Most striking of all is it to look at the long Swedish record from 1756. For thirteen decades fertility fluctuates within narrow limits (232 to 251), about an average of 240, then plunges down to 231, 219, 196. Yet the fall in Sweden is less than in most countries. The chart shows graphically the corresponding movement in other parts of Europe. The last generation before the Great War witnessed a revolution in the vital history of the European races, in Europe and in Australasia.

The revolution, though felt everywhere save in Ireland, was not equally marked in all countries. The percentage fall from 1881, as shown in the last column of Table I, varies from 9 per cent in Italy to 43 per cent in Saxony. The second and third columns of the table show in all the countries least affected by the revolution a very large percentage of Roman Catholics. The connection between these two characteristics and a relatively small decline of fertility is not an absolute one; political, economic and racial differences between different countries also affect the position. But it is interesting to note that the four parts of one state (Germany), for which separate figures are given, show fall of fertility, density of population, and deficiency of Roman Catholics always in the same order—Bavaria, Prussia, Württemberg, Saxony.

The statistics given above are simply fresh illustrations of well-known facts: the generality and the diversity of the fall of European fertility since 1881. The fall occurs at nearly the same time in Europe and in countries settled from Europe, regardless of differences of race, climate and economic conditions. But the extent and speed of the fall differ enormously from one country to another, and within any one country, according to creed, oc-

cupation, social class, density of population, prevalence or the reverse of women's industries, and other factors.

For European settlements overseas, other than Australia and New Zealand, it has not proved possible to prepare comparable figures. The most important of these settlements are the United States of America and Canada, for neither of which is there any complete registration of births going back for any considerable length of time.

In one of the Canadian provinces the number of births is recorded from 1871, but the age groupings vary from census to census, and the increasing proportion of Roman Catholics in the population vitiates comparisons. The following table, however, comparing the provinces of Canada in 1921, is sufficiently instructive; decline in the proportion of Roman Catholics and decline in fertility go almost step by step from Quebec at one end of the scale to British Columbia at the other end. It is impossible to doubt that the table shows the result of a differential fall of fertility similar to that which we can see in actual operation in Holland. The table shows also in its last column how high fertility is partially offset by high mortality in the first year of life.

TABLE III—CREED AND FERTILITY IN PROVINCES OF CANADA

Province	Percentage of Roman Catholics in population (1921)	Legitimate births per 1000 married women, 15 to 44 (1921)	Infant mortality per 1000 born (mean of 1920-22)
Quebec	85.5	327	146
New Brunswick	44.4	245	79
Prince Edward Island	43.9	254	117
Manitoba	30.7	218	105
Nova Scotia	22.7	219	93
Saskatchewan	21.4	213	84
Alberta	20.9	191	93
Ontario	20.5	195	89
British Columbia	12.2	144	61

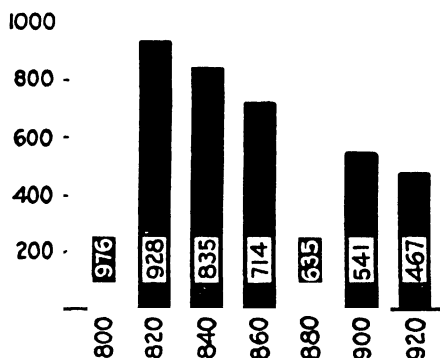
AMERICAN EXPERIENCE. Since many of the commonwealths in the American Union have been slow in gather-

ing vital statistics, the trend of American fertility is best revealed in the following table, chiefly from Willcox,³ based partly upon U. S. census data and partly upon estimates from such data.

**RATIO OF CHILDREN UNDER 5 YEARS OF AGE PER 1000 WOMEN
AGED 16 TO 44 YEARS IN THE UNITED STATES**

<i>Date</i>	<i>Ratio</i>	<i>Date</i>	<i>Ratio</i>
1800	976	1860	714
1810	976	1870	649
1820	928	1880	635
1830	877	1890	554
1840	835	1900	541
1850	699	1910	508
		1920	467

**FIG.23-RATIO OF CHILDREN UNDER
FIVE YEARS OF AGE PER 1000
WOMEN AGED 16 TO 44 YEARS
IN THE UNITED STATES**



These figures show that in the century 1820–1920 the fertility of the general population fell one half, which is corroborated by the fact that in 1900 the proportion of white children under sixteen years of age to white females

³ "Publications of the American Statistical Association," March, 1911.

over sixteen years of age was just half of what it was at the taking of the first census in 1790. Evidently some large anti-conceptual factor or factors came into the situation, for in the course of a hundred years the United States has absorbed from Europe thirty-three millions of extremely prolific immigrants who knew nothing of birth-control. The study made by Baber and Ross, 1921-23, of the completed families of 2200 living couples of native American stock indicates that these couples produced less than two thirds as many children as their parents did.⁴

CAUSES OF THE DECLINE OF FERTILITY. We cannot account for this fall in fertility as the eminent French economist Leroy Beaulieu would account for the low birth-rate of France: "Sterility," he says, "is one of the most marked characteristics of the growing old of individuals; so also is it with peoples." If age sterilizes, then it is the peoples of the East—of India and of China—that ought to show a falling birth-rate; not young lusty peoples like the Canadians, the Australians, and the Californians.

The mystical hypothesis⁵ that the birth-rate has declined *because of* the fall in the death-rate—which implies that somehow the human reproductive organs watch the government reports on vital statistics and deliver fewer babies as it becomes apparent that fewer die—is one of those quaint conceits which brighten the dry labors of the demographer.

Nearly as naïve is the notion that our constitutional reproductive power is becoming adjusted with lightning speed to a death-rate of 11 or 12 per thousand. Such an adjustment might indeed be brought about in the course of some hundreds of generations—at the rate that eye

⁴ R. E. Baber and E. A. Ross, "Changes in the Size of American Families in One Generation," University of Wisconsin Studies in Social Science and History, No. 10, Madison, 1924.

⁵ See C. E. Pell, "The Law of Births and Deaths," 1921.

color might change, or head form, or cast of features. But to suppose that the reproductive capacity of any race has actually dropped a third or a half in a single generation—really that is asking too much!

On the basis of the most extensive field inquiry that has ever been made in England Miss Elderton concludes: ⁶

The fall is not due to any physiological decrease in fertility, but to a widespread and nearly universal artificial restriction of the family. There is no evidence whatever to support the hypothesis that higher wages, the pursuit of pleasure and an increased luxury have produced partial sterility; there is on the other hand, an immense amount of evidence pointing to the wide sale of many different types of preventives, and to the great demand for abortifacient drugs. . . . There is no real evidence to associate it with a decreased physiological fertility of English men and women. The assertion that increased luxury is the source of such physiological decrease in fertility has no real weight behind it; the fall in the birth rate coincides rather with the lean than with the fat years, with the years in which wages tended to fall rather than with the years of their abundance.

Some of the fall is due simply to fewer young women becoming wives in the most fruitful age period, viz., 16–20. But the marked increase in the proportion of childless marriages indicates that physiological sterility is growing; for rarely does a fit married couple sidestep offspring altogether. The use of injurious contraceptive devices in the early years of married life may have something to do with this startling growth of involuntary childlessness. In the main, however, the cause of general reduction in fertility is the widespread use of measures to prevent conception. As far back as the eighteenth century such means were known among libertines. Between 1818

⁶ Work cited, pp. 232, 234.

and 1834 some English reformers maintained a pamphlet propaganda to bring such means to the attention of the English laboring class; but promptly it came under a heavy religious and social ban. In France the underground percolation of this illicit knowledge began to be apparent in the birth statistics early in the nineteenth century. For a decade in the middle of the century a population of 35 millions had about the same number of births and deaths that a population of 24–26 millions had during the decade 1771–80. It was in the third quarter, however, that the means of preventing conception were perfected and the knowledge of them was spread, both by reformers and by those interested in their sale.

In accounting for the fall in fertility this new power of man to bring a natural process under his will is not the only thing to be considered. The progress in the use of disease-preventive—say a serum—can be accounted for entirely in terms of the spread of knowledge of its effects; for the fear of disease is a constant. But the resort to the use of contraceptives is not to be explained altogether in terms of the spread of knowledge of their existence; for the fear of a large family is not a constant. It depends on many things, such as the burden of children, the benefit from children, the extent of the sacrifices which a large family entails, the weight of the wife's will as against that of the husband's, the class standard of living, the outlook as respects economic security, etc. These will be considered in the next chapter.

CHAPTER XX

FACTORS OF AN ADAPTIVE FERTILITY

AMONG the advanced peoples various developments work against prolificacy.

1. *The saving of lives.* The prolonging of adult lives into the gray years blocks often the oncoming of new life. Half a century ago the average working-class couple ten years after marriage might have but one parent at the fireside; now there may be two parents in the inglenook. The longer they have elders to care for, the fewer children a couple in cramped circumstances will care to raise.

Again, our latter-day success in saving infants lessens the demand for births in quick succession. Suppose a couple wish to rear five children. Formerly they might have had to produce eight babies; now six births suffice. The death of a small child creates a gap in the family which the couple proceed to fill; but, no gap, no added baby.

2. *The rising cost of having a baby.* At one time the services of some knowing old woman sufficed for childbirth. Half a century later the expectant mother feels entitled to the care of a trained licensed midwife. After another half-century has elapsed, hospital care and a doctor are expected. Since these give both mother and infant a better chance, the husband is deemed a brute if he does not provide them. In New York City, for the rank and file of the community, provided no abnormalities of labor occur, it costs from \$200 to \$300 for the baby to be

brought into the world. Coming at one time this sum is for many a real burden. The expectation of greatly increased expenses when a child is born and for some time after makes many people of slender income fearful of adding to the family.

3. *The rising cost of child rearing.*¹ As people become more intelligent and responsible, children are greater sources of anxiety and expense. With the streaming of light into the wider social layers, the standard of what the ailing child is entitled to constantly rises. When her baby droops, the Russian peasant woman or the Bhil mill worker of Bombay mutters hopelessly, "It doesn't matter." But this bedside fatalism is dying out; to-day even the working-class mother is well aware that there are ways of saving her infant when it does not thrive. But these ways add to the rearing cost of the child and forbid the undertaking of a large family. Then, too, more and more, parents realize that their child need not struggle through life handicapped if eye trouble, or adenoids, or hip disease, or spinal curvature is dealt with in time. But operations cost money.

Moreover, as the plane of popular education rises, the handicap of the unschooled breadwinner becomes heavier.

¹ Wrote Sidney Webb, the eminent English economist, in 1907 in advocating state pensions for mothers: "Under the present social conditions the birth of children in households maintained on less than three pounds a week (and these form four-fifths of the nation) is attended by almost penal consequences. The wife is incapacitated for some months from earning money. For a few weeks she is subject to a painful illness with some risk. The husband has to provide a lump sum for the necessary medical attendance and domestic service. But this is not all. The parents know that for the next fourteen years they will have to dock themselves and their other children of luxuries and even of some of the necessities of life just because there will be another mouth to feed. To four-fifths of all the households in the land each succeeding baby means the probability of there being less food, less clothing, less house room, less recreation and less opportunity for advancement for every member of the family.

Even ignorant parents realize that in modern society the illiterate, like the felon, is virtually "condemned to hard labor for life." But extended schooling means that the parents must carry the child longer. Before the British National Birth Rate Commission in 1918 Monsignor Brown advanced the

very obvious proposition that restrictions upon the earning capacity of the children of the poor must increase the burden of parenthood. Factory and Workshop Acts began to do this in England in 1864, and since that date a succession of enactments have effectively destroyed the child of the poor as an economic asset, except to a very limited extent . . . in addition to the Factory Acts, the Education Acts of 1870, which established the Board Schools, and of 1876, which set up universal compulsory attendance, and that of 1880, prescribing a certain standard before children could go to work, and establishing authorities to enforce attendance, still further restricted the employment of children. In 1891 a further act made it unlawful to employ any child under twelve so as to prevent full attendance at school, and in 1901 it was enacted that no child under twelve might be employed in a factory or workshop. . . . Such restriction upon the earning capacity of children must, in the case of the poor, and especially the poor with large families, lead to increased parental burdens. . . . The poor have been powerless either to prevent this legislation or to obtain any compensation for its burdensome effects upon them, and have been driven in self-defense to restrict their families. Since 1877 knowledge of methods other than the crude method of abortion have become widely known throughout the community. It is true that this knowledge appears to have had effect, first of all upon the higher grades of society, and then upon the more skilled workers. But I do not think that anyone familiar with our urban population will deny that knowledge of these other methods has now reached all classes. It is very likely true that the restrictions upon child labor alone would not have led to the decline in the birth rate which has taken place since 1880. But these restrictions, taken

together with the diffusion of knowledge as to easy methods of preventing conception, have had their inevitable effect.²

In the American States, for town dwellers generally the child has come to be a pure encumbrance until he is fourteen years old; and within two or three decades we shall, no doubt, see it taken for granted that the normal youth will remain in school until the age of sixteen or eighteen.

4. *Economic insecurity.* Even the man with a good income will be wary of strapping on his back many sixteen-year burdens if he has no firm grip on his job. In 1918 before the British National Birth Rate Commission a skilled mechanic testified:

The knowledge that the birth rate can be controlled has permeated from the upper strata of society downward, and it seems to me that we should try to observe in our own particular class what specific factors are at work which may cause a restriction of the birth rate. . . . One of the biggest factors is the fact that we have no security of tenure of employment. Let me give you an example. I am assistant foreman at a munition works. I am not doing work this afternoon. I am here. It means that the assistant foreman will be missed by the manager. The manager may come around this afternoon, and possibly something under my control has gone wrong. Because the manager is in a bad temper, or his dinner has not agreed with him, or something like that, I may be told when I go in the other morning that I have a week's notice. You have there the position exactly. Before the War I might have gone in tomorrow morning, and at eleven o'clock I might have been told I was not wanted after twelve, and I could say nothing. . . . We have absolutely no security at all of employment, and just because of a personal whim of the foreman, or of anything going wrong in the shop, or because the manager has blown the foreman up, the foreman can turn round on the men under him, and someone has to suffer.

² "Problems of Population and Parenthood," 1920, p. 33-34.

Right the way down, there is no security of employment at all. . . . The skilled man can remember what his parents had to go through in order to bring him up . . . and some of the things are not very nice to remember. If we have children of our own, we have made up our minds that we are not going to let them suffer in the same way as we have suffered, because we know . . . what we have gone through. The result is, that in preference to having four children who would be inadequately cared for, we prefer to have two, or only one, whom we should be able to look after in the proper way.⁸

The American wage-earner is in the same case. Until recently the average employer gave himself not the slightest concern as to what became of the worker let out through no fault of his own. I have known of a firm long aware of the necessity of a shut-down waiting till half an hour before the evening whistle blew to post a notice throwing hundreds of men out of a job for an indefinite time. This barbarous "firing" policy is a survival from the time of the small concern when the competent workmen let out could walk around the corner and get a job just as good. That such is not the case to-day may be learned simply by interviewing a number of working-men as to what loss of job has meant to them. What tales of tramping the streets looking for work, of rushing hither and thither on a rumor that this firm or that is taking on men, of returning night after night worn out and discouraged to an anxious family, of the sharp cutting down of household expenses, the begging of credit from butcher and grocer, the borrowing of small sums from one's cronies, the shattering of the hopeful plans for the children! At one time in the last unemployment crisis in the United States (1921), more than six million workers were out of work! No wonder that among wage-earners there runs the

⁸ Work cited, p. 39.

bitter saying, "A working-man is a fool to have a wife and kids."

The stronger position of the American wage-earner since the restriction of immigration may induce employers to stabilize the job. Once this is done, intelligent workers may be more willing to rear a fair-sized family.

5. *The decline of caste.* More and more in Western society caste barriers are down, so that how far a man shall rise depends chiefly upon himself. The lists are open to all, and the passion to "succeed" grows with the value of the prizes in view. Never before have so many people of lowly origin strained to reach a higher rung in the social ladder. Now, in general, it costs something to mount this social ladder. The conquering of social prestige makes demands in the way of style of living, scale of entertainment, and giving to public causes. Hence, children impede ascent, so that social climbers dread the handicap of a large family. In an ideal democracy, to be sure, a man's standing would depend upon his personal merits, the value of his services to his fellows, the worth of his children, never on his style of living. But ours is a democracy with a strong mammonistic taint. So, with their limousines, their Oriental rugs, and their European tour, the one-child couple are accounted more to be envied than those who give up these things because they are rearing five high-bred, well educated children.

6. *The multiplication of material wants.* Up to the early nineteenth century, when in some countries the working class began to feel the stimuli of legal freedom, opportunity to rise, access to free land, schooling, and the ballot, the workers' wants rarely extended beyond the customary standard of living of their class. Theirs was the psychology of the *peón*, who will work only half the week if his wages be doubled!

When customary standards rule a strong curb upon family size is the desire for "decencies," i. e., things upon which hinges one's social prestige. Three quarters of a century ago the English economist Senior wrote:

Shoes are necessities to all the inhabitants of England. Our habits are such that there is not an individual whose health would not suffer from the want of them. To the lowest class of the inhabitants of Scotland they are luxuries. Custom enables them to go barefoot without inconvenience and without degradation. When a Scotchman rises from the lowest to the middling classes of society, they become to him decencies. He wears them to preserve, not his feet, but his station in life. To the highest class, who have been accustomed to them in infancy, they are as much necessities as they are to all classes in England.

Two centuries ago, in the northern American colonies, the customary standards of living were so simple that they offered practically no obstacle to the rearing of large families. "Professional men lived much like the well-to-do farmers, in comfort and the ^{case to} surrounded with those families of ten and twelve ^{who} which put far into the future the shadow of race suicide. Life was simple and easy because there was little to do. Servants were few, because the older children brought up the younger." ⁴

Writes Henry Adams:

Many a country clergyman, eminent for piety and even for hospitality, brought up a family and laid aside some savings on a salary of five hundred dollars a year. President Dwight of Yale . . . eulogizing the life of Abijah Weld, pastor of Attleborough, declared that on a salary of \$250 Mr. Weld brought up eleven children, besides keeping a hospitable house and maintaining charity for the poor.⁵

⁴ A. B. Hart, "National Ideals Historically Traced," 1907, p. 184.

⁵ "History of the United States," 1889, Vol. I, p. 21.

According to Professor W. M. West:

The homes of such professional men would now be considered plain in the extreme, lacking all luxuries and many things regarded as essentials today in the homes of mechanics. The farmers and mechanics of that time found clean sand a substitute for carpets, and pewter or wooden dishes sufficient for tableware. There was no linen on the table; nor prints on the walls; nor many books, nor any periodicals in the house (unless perhaps a small weekly paper). Except for hats and shoes (which were made, as well as sold, at the village shop), all the clothing of the family was homemade, and from homespun cloth and yarn. The three meals of the day were formed from varying combinations of salt pork, salt fish, potatoes and turnips, rye bread, and dried apples, with fresh meat for the town mechanic perhaps once a week. Among vegetables not yet known were cauliflower, sweet corn, lettuce, cantaloupes, rhubarb, and tomatoes; while tropical fruits, like oranges and bananas, were the rare luxuries of the rich. Even the rich could not have ice in summer.⁶

Now custom has ceased to be much of a brake on the rush of wants. Advertising, the newspaper, the novel and the cinema, the ease of getting about, the showy consumption of the well-to-do, social contacts ever more numerous and varied—all these carry the craving for luxuries hitherto looked upon as the prerogative of the rich down among the workaday millions.

Remarks the sociologist Professor F. S. Chapin:

There are more ways of being poor than ever before in the history of society. . . . We want fountain pens, vacuum cleaners, electric irons, electric toasters, electric washing machines, phonographs and radio sets, as well as a telephone and an automobile. Some of us want several automobiles and a telephone connection on each floor. This elaboration of the standard of living presents more ways of being distinctive in dress and

⁶ "American History and Government," 1913, p. 390.

dwelling than we had before, in spite of the standardizing of fashion through machine-made garments and utensils and furniture.

More than that, the fountain pen requires a pocket clip or chain ring. Once the cook-stove warmed the living room and we threw the dishwater out of the window. Now we need humidifiers, radiator brushes and sink brushes. The list of Ford accessories is hardly contained in a twenty-page booklet and the number of radio parts and accessories grows by geometrical progression. As our worldly possessions increase, the need for all such repairing and protective devices grows too.

Moreover, in our society the key-note is given by business men eager to exchange goods for money at a profit. The newspapers are coming to be advertising circulars containing a little pure reading matter. The typical magazine is "a small body of literature entirely surrounded by advertisements." Every device psychology can suggest is employed to break down "sales resistance," i. e., the public's residue of common sense. Advertising, window-dressing, personal solicitation, selling on the instalment plan—no stone is left unturned. Very much to the point is the comment of a social worker, Mr. Billikopf:

Every newspaper, every magazine, every street, every railroad track, every street car, every country road is lined with advertisements carrying suggestions intended to be subtle, though often they are blatant, to buy, buy, buy. Every human impulse bad and good is played upon. Not only do we advertise publicly but we send letters and agents to the homes to try to extract from any and every one what money he has. In every way we set about deliberately to make a person feel that life will be a failure unless he or she uses this soap or shaving cream, drives this automobile, owns this radio, sees this movie or play, takes this trip or reads this newspaper. This continual pressure relentlessly applied subjects our working-class population to a strain which they cannot withstand, nor could we in their places.

All this artful stimulation of pecuniary desires tells against adding a baby to the household which already has enough children to gratify the parental instinct. A burden which *must* be carried for fourteen years and *may* have to be carried for twenty-odd years says "No" to a hundred wants implanted by a mad commercialism. To be sure, if babies were produced in factories like automobiles and sold for a profit, there would be a counterbalancing pro-child propaganda. Human nature being what it is, what a wealth of talking points the baby "ad man" or salesman would have at his command! In a few years their persuasions might add half to the size of the average family. But, since there is no commercial interest in the marketing of cherubs, all the costly laudation is put behind the touring-car, the motor-boat, the radio set, the scientific heating system; but none is put behind the baby.

7. *The emancipation of women.* The added child occasions two primary costs: a *physiological* cost and an *economic* cost. The economic cost may fall upon both parents, but the physiological cost is borne by the mother alone. Now, when males dominate, it is only the *economic* cost that comes into the reckoning. The maternity pangs, exhaustion, or even death of the mother are little considered. In a *he* epoch the ordinary husband agrees with Martin Luther: "If a woman becomes weary or at last dead from bearing, that matters not; let her then die from bearing, she is there to do it." Nor does he retch at Napoleon's dictum: "Woman is given us that she may bear children. Woman is our property, we are not hers, because she produces children for us—we do not yield any to her. She is, therefore, our possession as the fruit-tree is that of the gardener."

Visiting once a rural bloc of Slavs who preserve in the

midst of American society their Old-World masculinism, I found that the typical way in which the woman dies is *in trying vainly to bring into the world a twelfth, fifteenth, or twentieth child*. The priest bids the poor wife endure her agony as "God's will." The widower promptly takes another wife to be exhausted in turn. In the end the large family comes often into the hands of the fourth or fifth wife.

Among the pre-war Germans, according to Frau Stritt, president of the Woman's Suffrage Union:

The question of family limitation is still handled in a purely academic way; people sit around the discussion table and exchange opinions, without reckoning at all with the most important factor in their discussion, the mothers immediately concerned. . . . Women still accept in the questions of population the standpoint of man as the only correct one.

Even the Social-Democratic leaders looked upon child-bearing with the serene eye of the male. Describing a German mass meeting in 1913 under the auspices of the Social-Democratic party "against the birth strike," Dr. W. J. Robinson writes:

What particularly amused me—and pained me—in the anti-limitationists was the ease and equanimity with which they advised the poor women to keep on bearing children. The woman herself was not taken into consideration, as if she were not a human being, but a machine. What are her sufferings, her labor pains, her sleepless nights, her inability to read, to attend meetings, to have a taste of life? What does she amount to? The proletariat needs fighters. Go on, females, and breed like animals!

Now, in the last half-century, this male domination has been well rapped. The universal woman's movement is breaking the fetters on the wife's mind and causing the

heavy cost of motherhood to be more considered by her husband as well as by herself. Furthermore, gifted ambitious young women are coming to realize that unlimited maternity plays havoc with a career. At best the bearing and rearing of five children take from fifteen to eighteen of a woman's choice years and make it hard for her to keep her footing in a profession filled with men.

8. *Fear of producing defective or weakly children.* Punctured now is the old idea that defective children be-token "a mysterious dispensation of providence." Modern knowledge of heredity deters thoughtful persons who suspect a taint in their family stock from launching offspring into the world. Moreover they may have heard that the "Mongolian" idiot is frequently a late child in a large family.

9. *The declining authority of the clergy.* Most clergymen, regarding the pangs of child-bearing as a curse laid upon the woman for the sin of Eve, stress the religious obligation to have a large family. They bid "increase and multiply and replenish the earth," ignoring the fact that this mandate was originally issued to a solitary human pair on an unpeopled globe, and again to the eight survivors of a deluge which had destroyed all other human life on the earth. Now that mankind is 235,000,000 times as numerous as it was when Noah left the ark, one might suppose that this emergency order is no longer in force. But no; were we as crowded as the Chinese they would go on, as mechanically as a talking machine, exhorting to "increase and multiply." The Catholic view was voiced in 1903 in a sermon by Cardinal Gibbons in which he said:

A large family is a blessing. To defeat Nature in marriage is as criminal as to commit murder. No excuse is possible—neither financial reasons or any other. The question of economics has no

place, should have none, in regulating the size of families.

Now, among the more enlightened people, the authority of the clergy, especially in matters so personal and private, is notably on the wane. In France, it is said, the Catholic priests have had to give up questioning married women in the confessional as to how they regulate the size of the family.

10. *Acquaintance with the means of controlling births.* All the motives just set forth might have had no great effect had not the subterranean spread of knowledge of contraceptive methods and devices permitted sexual satisfaction to be divorced from the begetting of children. For the first time in history it has come to be possible for couples to regulate the number of conceptions without curtailing conjugal intercourse.

In 1904 the Royal Commission on the Decline of the Birth-rate in New South Wales reported:

From the evidence of the medical witnesses, police officers, and others, we are led to the conclusion that:

- (a) the practice of preventing conception by artificial means is common among all classes of the community and in all parts of the State;
- (b) this practice has greatly increased during the last fifteen years; and
- (c) the extension of the deliberate and intentional avoidance of procreation by means used to prevent conception is the main factor in producing the decline in birth rate which we have ascertained to have taken place in New South Wales since the year 1888; and that
- (d) induced miscarriage is frequent in the married as well as in the unmarried, though not to the same extent in all classes;
- (e) it has become more common in recent years; and

- (f) its increase is sufficiently apparent to justify its being regarded as a well defined factor in producing the decline in the birth rate.

The 1917 report of the British Commission of Inquiry into the Declining Birth-rate found:

Conscious limitation of fertility is widely practiced among the middle and upper classes, and there is good reason to think that, in addition to other means of limitation, the illegal induction of abortion frequently occurs among the industrial population.

THE DIFFERENTIAL ASPECT OF FAMILY LIMITATION.
Dean Inge of St. Paul's Cathedral, chairman of the above commission, thus describes the situation in England: ⁷

Until the decline began, large families were the rule in all classes. . . . Since 1877 large families have become increasingly rare in the upper and middle classes, and among the skilled artisans. They are frequent in the thriftless ranks of unskilled labour, and in one section of well-paid workmen—the miners. The highest birth-rates at present are in the mining districts and in the slums. The lowest are in some of the learned professions. In the Rhondda Valley the birth-rate is still about forty, which is double the rate in the prosperous residential suburbs of London. In the seats of the textile industry the decline has been very severe, although wages are fairly good; among the agricultural labourers the rate is also low. It will be found that in all trades where the women work for wages the birth-rate has fallen sharply; the miner's wife does not earn money, and has therefore less inducement to restrict her family. In agricultural districts the housing difficulty is mainly responsible; in the upper and middle classes the heavy expense of education and the burden of rates and taxes are probably the main reasons why larger families are not desired.⁸

⁷ "Outspoken Essays," 1919, p. 70.

⁸ The small family appears to prevail more among the hand-workers than Dean Inge supposes. Recent studies show that in England among the married male workers 42 per cent report no dependent children.

About 1910 a survey ⁹ of England north of the Humber showed that "it is the less healthy parents, the men and women with the worse habits, and the fathers with the lowest wages who have the largest families." Nor is this differential overcome by a selective death-rate. The large industrial center Bradford furnishes data which show that "At all ages the parents with bad habits have more children alive than the parents with good habits." "Well-ventilated and clean homes have fewer children in them. The report sees the prolific unfit as a "swamp which is threatening to rise and engulf the nation." ¹⁰

In England and Wales in 1911 there were 119 births per thousand married males under fifty-five years of age in the upper and middle class, 153 among skilled workmen, and 213 among unskilled workmen. After allowing for unequal infant mortality rates, the babies surviving the first year in the three classes would be as 110, 136, 181. It is interesting to observe that while solicitors, physicians, and Church of England clergymen had about 100 births a year, costers and hawkers had 175, earthenware workers 181, and dock laborers 231.

Taking as index of fertility births in relation to wives of child-bearing age, then, if the fertility of the general population be 100, the coal miners score 126.4, the agricultural laborers 113.4, while the professional people score 65-80.

In the United States in families in which the birth of a child was registered in 1923 the number of living children averaged 5.35 for fathers 50-54 years of age who

Twenty-three per cent report one child, 16 per cent report two, while 9 per cent report four. In France the average number of dependent children in working-men's families where there are any at all is 1.65. About 17 per cent report more than three children.

⁹ "Eugenics Memoirs," XIX and XX, "Report on the English Birth Rate," 1914, p. 231.

¹⁰ Work cited, p. 239.

were boot-blacks, boiler washers, engine hostlers, long-shoremen, stevedores, draymen, teamsters, coal mine operatives, and common laborers. But the number of living children averaged only 3.54 for fathers of the same age group who were engineers, teachers, physicians, lawyers, judges, inventors, dentists, clergymen, chemists, authors, newspaper men, architects, bankers, and railway officials.¹¹ This means about two more children left by hand workers than by brain workers, by unskilled laborers than by men of the learned professions, by the privates in the industrial organization than by the officers.

Pearl shows ¹² the relative fertility of the American occupational classes in 1923 to be as follows:

1. Professional service	1.00
2. Clerical occupations	1.02
3. Trade	1.23
4. Domestic and personal service	1.27
5. Public service	1.31
6. Transportation	1.44
7. Manufacturing and mechanical industries	1.58
8. Agriculture forestry, and animal husbandry	1.65
9. Extraction of minerals	1.90

He concludes: "In our population it appears that the Professional, Clerical, Trade, Domestic and personal service, Public service, and Transportation occupational classes are reproducing themselves in such manner as to maintain about in its present status their relative representation in the population. But the heavy laboring classes, Manufacturing, Agriculture, and Mining, are reproducing themselves greatly in excess of their representation in the population."

¹¹ "Births, Stillbirths, and Infant Mortality Statistics," 1923, pp. 171-181.

¹² "American Journal of Hygiene," July, 1926.

The researches of Baber and Ross¹³ upon the completed families of living couples show that in the Middle West a hundred dependent couples of native stock, taken at random, had had 649 children, while 2500 couples of native stock, having a son, daughter, nephew, or niece in college, averaged 280 children to a hundred couples. Here we find the undesirables producing children *two and one third times as fast* as the desirables.

M. March has published the following table¹⁴ showing the number of children born into the families of employees and workmen in the service of the French government and the French local authorities:

NUMBER OF CHILDREN BORN PER HUNDRED FAMILIES
(Duration of marriage 15-25 years)

Income in dollars

	Less than 100	100 to 200	200 to 300	300 to 500	500 to 800	800 to 1200	1200 to 2000	Above 2000
Employees	277	241	259	245	223	231	229	238
Workmen	329	321	293	280	254	234		

Observe that the higher the occupation in the social scale, the smaller the family; the better the remuneration within any grade in the scale, the smaller the family.

It is obvious what this would lead to in time; but it is a matter I cannot go into here for it is but one facet of a great subject; viz., population on its *qualitative* side. This book limits itself to the *quantitative* side of population.

¹³ "Changes in the Size of American Families," Bulletin of the University of Wisconsin, 1924.

¹⁴ Cited by A. M. Carr-Saunders, "Eugenics," 1926, p. 248.

CHAPTER XXI

WOMEN AND ADAPTIVE FERTILITY

WHEN, in 1555, the English religious reformer John Rogers was burned under "Bloody Mary" "his wife with nine small children and one at the breast, followed him to the stake." In an old English churchyard one reads this epitaph over the grave of the first of the squire's three wives:

Here lyeth buried Mary, wife of Haines Barke, of this parish, Esq., by whom he had issue fouer sonnes and nyne daughters, six of them died in their infancy, the last was still born, and within 5 days after his birth she died, and as she was fruitful in children soe was she fully indued with the properties of a good woman and a faithful lovyng and obedient wife to her husband, who happily enjoyed her neere 16 years until the 16th daye of Dec. 1653 . . . She died in the 36 years of her age.

In the Scotch Highlands the poor mother would croone to her babe:

Heigh o heu, O what'll I do wi' ye?
Many o' ye and little to gi' ye!
Black's the life that I lead wi' ye,
Heigh o heu, O what'll I do wi' ye?

No wonder there grew up such Scottish proverbs as,

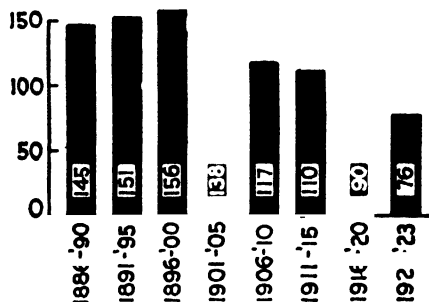
The best that can happen to a poor man is ae bairn dee, and the rest follow,

or

Waly, Waly! bairns are bonny!
Ane's enough and twa's ower mony.

So blighting a fertility is as out of date as the poultices of chewed bread which the poor Russian peasant mother used to tie to her nursling's hands or feet for it to suck when it became hungry during her absence at work in the

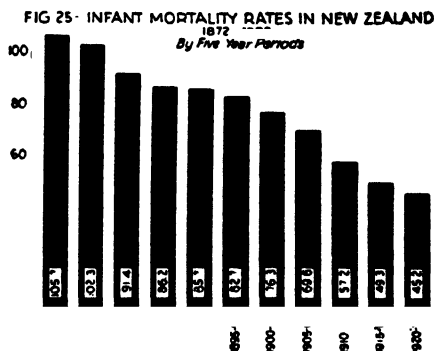
FIG.24- ANNUAL INFANT MORTALITY
IN ENGLAND AND WALES
BY FIVE-YEAR PERIODS,
1886-1923



distant field. Such spawning belongs with mud huts shared with the cattle, dirt floors, lousy straw pallets, bairns in rags, half the babies dying in infancy, smallpox and typhus ravaging the survivors, drink decimating the men as childbirth the women. In India, "The rates of mortality for males in several of the Provinces are more than double the rates of the Carlisle table (dating from 1815) and more than four times as heavy as those deduced from the recent Scottish census."¹ Yet despite such quick per-

¹ H. G. W. Meikle, actuary of the Government of India, "Report on the Age Distribution and Rates of Mortality Deduced from the Indian Census Returns of 1921 and Previous Enumerations," 1926, p. 23.

ishing "the probable natural increment in India at her present stage of development and apart from exceptional calamities" is "between 7 and 8 per cent in the decade."² Imagine what an ant-hill Scotland soon would be if Scottish women to-day took the Indian women as their models! In 1921 human lives were cut down about four times as fast in Chile as in New Zealand. The mothers of Chile heroically met the ravages of brandy and prevent-



able disease with a birth-rate of 40. Shall we reproach the New Zealand mothers with "slacking" when they content themselves with a birth-rate of 24? Why, even at that rate the New Zealanders are growing twice as fast as the Chileños! Why should the intelligent well-cared-for Australian mothers, who lose but 6 per cent of their infants in the first year, bear as if they were Egyptian *fellahin* mothers, who lose 27 per cent? Or mothers of Rangoon, who lose 30 per cent? Or mothers of Calcutta, who lose 38 per cent? Or mothers of Bombay, who lose 55 per cent? Or mothers of Cawnpore, who lose 60 per cent?

For sure, more and more of human fecundity will be let lie fallow, for it was built into us ages ago to balance a

² "Census of India, 1921." Report, Part I, p. 48.

rate of wastage no longer met with among the enlightened. In China the babies die so fast that about all of this fecundity is needed to keep up numbers. In Southern and Eastern Europe about two thirds of it suffices; in Central Europe, a half; in Scandinavia, Great Britain, Australasia, and the United States, a third. Ere long deaths will be so few among us that *a fourth* of woman's reproductive capacity will serve to maintain population. When that time comes, who but lunatics will protest because wives are bringing into the world only a half or a third of the babies they are physiologically able to bear?

AN EMBARGO THAT HITS CHIEFLY THE POOR. Knowledge of the means of evading unwelcome pregnancies is very unequally distributed. Women of education, means, and leisure find out from their physicians how to control the size of their families and do control them. But the ignorant poor cannot learn it from the hospital clinic. In the United States since 1873 a federal law prohibits, under a penalty of five years in prison and a fine of five thousand dollars, the use of the mails and other common carriers for the dissemination of contraceptive information or the distribution of contraceptive supplies, *even to members of the medical profession*. In half the States contraceptive knowledge may be suppressed as "obscene," while eighteen States go further and forbid the giving of such information by any means whatever, even verbally. No doubt the wives of nine tenths of those legislators had this information and were using it. France since 1920 prosecutes the givers of such information and would persuade the League of Nations to brand such information as "obscene." Italy punishes the "insidious secret dissemination of neo-Malthusian theories." So it comes to pass that, while the well-off women have only such babies as they want, the wives of the poor and ignorant have to

accept all the consequences of conjugal intimacies and suffer what sometimes amounts to a *penal* maternity. No wonder that the 1924 deputation to the British minister of health, protesting against the denial of information at health centers, could say, "There is hardly a doctor to-day who, consulted privately, does not admit that it is nothing short of vile cruelty to refuse the knowledge of contraceptives to women whose mental and physical health and, in many cases, environment and economic circumstances make it impossible for them to produce healthy children, still less lead tolerable lives themselves. . . ."

The mistress of a grass hut in the African bush or a mud hut in an Oriental village can generally undergo the twelve to twenty pregnancies she will experience and care for the resulting children without ruining her health. She has never heard of infection. She worries not over microbes, tonsils, or adenoids. Her tots play in safety with other children of the village. Her older children look after the younger, and she has their services as soon as they are old enough to help. But what of the wife of an unskilled laborer or a petty employee with five small children in three rooms on the fourth floor of a tenement house? Her wee ones may fall off the furniture, or out of the window, or down the stairs. One step off the sidewalk, and they are in peril from horses, trucks, and fire-engines. She realizes that the well-to-do lose but one fourth as many of their babies as the poor, and is distraught by knowing standards of infant care she has not the time and strength to attain. For at least eight years her children must be sent clean and well clad to school on one half the days of the year. Unless she keeps her children presentable and her home neat, her name is a byword.

Now, an increasing proportion of the wives of the poor

simply cannot meet these requirements when babies come as "nature" sends them. Some die early leaving a motherless brood. Many become physical wrecks and drag out their years in misery. Some in sheer desperation produce on themselves barbarous abortions which ruin their health. Women who might have rosy children to rejoice in bear dead-born or puny short-lived babies because after one birth they are given no time to recover their strength before again they are pregnant. Those who bear only defective offspring are obliged in anguish of soul to go on committing crimes against the race simply from ignorance of how to check the flood of unwanted babies.

GRIM REALITIES OF INVOLUNTARY MOTHERHOOD. We do not have to guess the despair of these women. In the bushels of letters received by Mrs. Margaret Sanger, the courageous battler for voluntary motherhood, are revelations which could melt a heart of stone. To read them is to occupy a listening-post on the brink of Tartarus.

From a Montana mother of five ranging from seven years to ten months:

Our family is so large and my husband gets such small pay we can hardly live. We could not send our little boy to school because we could not buy shoes for him. I am a cripple, was almost burned to death when a child, which makes caring for the little tots and housework hard for me. I had to get up when baby was eight days old because we could not pay for help and I haven't been well since. Could you tell me some way to prevent having more?

From a Florida wife of nineteen who has been married four years and has three children:

I don't want any more, God knows I don't. I think I could raise these to be good Christian women if I didn't have any more. I get weaker every time. Before I was married I was always

called so healthy but now I am just a nervous wreck. . . . My husband is only getting \$2.50 a day and that is all we have.

From an Oklahoma woman thirty years old and the mother of eight:

We are poor people and my husband works hard. My oldest child is fourteen years and the youngest two years and there will be another in four months. I have more children than I can care for. . . . I don't get straight after one child before I have to have another.

From an Arkansas wife:

I am the mother of seven children, six living, and I sure have my hands full taking care of so many, for we are poor people. My baby is two years old, and I am in dread of another all the time, as so many mothers are.

From a New York woman:

I am a mother of six children ranging in years from fourteen to two and I have undergone two abortion operations. Am 30 years of age and live in terror of the future and more unwanted children. We are people of very moderate means and it makes us hustle to make both ends meet. . . . We realize we have committed a crime in having too large a family, but what can we do when the family physician cannot be made to tell you even the slightest idea of what to do.

From a Pennsylvania wife of thirty who has five children:

We are poor people and my husband and I are always worried about our children. . . . I would like to see my children raised right, but how can you raise them right when you have so many and nothing to raise them on? I work hard every day. I have to do all my sewing, for we can't afford to buy things made up. My husband doesn't want any more children and I don't. We are awful careful, but I am so afraid for I know it will happen and

I don't know what will become of us. I never had no chance in the world for I came of a big family and my mother and father had a hard time.

From a Pennsylvania wife of twenty-three, the mother of two children, who has "a terribly hard time" in giving birth to a baby:

I live in a small mining town, surrounded by large foreign families. They usually have from five to nine children and as I sit in my home looking out on the dirty street in front of me, and see all those dirty, unkempt and neglected children playing in the gutter I shut my eyes and cry bitterly when I think of the future.

From the wife of an unskilled laborer in New Hampshire:

I'm from an awful poor family where my mother had sixteen children and I'm the oldest and I'm 24 years old. If you only knew what I suffered and all my sisters and brothers and mother also, because she had a new baby almost every year of her married life. She had such hard times with every baby. She didn't want all them babies but she didn't know how to prevent it. If you only knew how we had to sleep in bed—six of us in one bed because father couldn't afford to buy another bed. . . . I don't want to bring babies by the dozen into this world and make them suffer like I suffered when there was 16 of us in one family.

From a young Ohio mother:

Is there any safe way in which a woman can keep from raising children? When I was but seventeen I married a man of eighteen and in ten months I gave birth to a five-pound baby girl and in twelve months and ten days another five-pound baby girl was born and in twelve months and fourteen days a big nine-pound baby boy was born. Now he is only fifteen months old and I am to become a mother again any time now. So if any

one needs advice I think it is me for no one knows what I have to suffer. I am trying to do my part, for my husband is a hard working man and living is so high we can hardly make a living. Other women around I know of have taken drugs and poison dope to get rid of babies in the womb but I don't want to do that. So if there is any safe way of prevention please tell me.

From a Mississippi woman with six children in school and three little ones at home:

We now have more children than we can do justice by both mentally, financially and morally and I cannot give my children the proper care, education and moral training they by right should have and do my housekeeping too. . . . I have no chance to go to church or Sunday School, neither can I teach my children the Bible at home as I am always too busy.

Writes a poor foreign-born coal miner from Pennsylvania:

I am father of 6 children in 5 years, two of them living and two sets of twins born prematurely. . . . These two living children, they are sick in the first year, and my wife, she is very poorly and had to nurse the last baby on the bottle. She do not have milk for it. . . . Help me for God's sake to prevent having any more trouble as we have already.

ENFORCED BEARING OF WEAKLINGS AND DEFECTIVES. Let those who are unmoved by these cries of despair consider whether society can afford to require women to go on bringing into the world sickly or defective children. Here is an Ohio farmer's wife, at thirty-seven the mother of eight:

I haven't got a healthy child in the bunch . . . I can't hardly cook what is absolutely necessary for husband and children to eat; in fact I can't hardly get my work done at all. I am consumptive . . . it is awful how I cough and spit . . . Do you wonder at me writing to you?

From a Minnesota mother:

My baby is only 10 months old and the oldest one is 7 and more care than a baby, has always been helpless. We do not own a roof over our heads and I am so discouraged. I want to die if nothing can be done . . . I not only have a terrible time when I am confined but caring for the oldest child it preys so on my mind that I fear more defective children. Help me please.

From an Oklahoma woman who in nine years of married life besides bearing two living children has given birth to three dead ones and suffered two miscarriages:

We are poor. We haven't a roof of our own. My husband has to work by day work for a living, hasn't got a steady job. Don't believe I can stand it any more.

From Illinois a distracted woman writes:

I am a mother of 13 children, 7 of them I am sorry to say is dead and I have a little babe not five months old, yet he has a valve of his heart not closed and I am Pregnant again about six weeks & I have been sick since my baby was born. I can't half take care of him now and there has been something wrong with five of our children that is dead. . . . I sometimes think I will end it all. . . . Would you tell me something to do.

Owing to the state of the law every one of these heart-rending appeals has to be denied.

MARITAL CONTINENCE AS A REMEDY. From these letters see how naïve are the vowed celibates who expect these situations to be avoided by marital continence.

The wife of a poor man writes:

We have had no intercourse since before the birth of the second child, three and one-half years ago. . . . Naturally we are not very happy; we have a great many quarrels and he has told me a good many times that he could divorce me because of my

refusing him. . . . I can't sleep nights through worrying about losing my husband. . . .

From South Dakota:

I am trying to keep away from my husband as much as I can but it causes him to be quarrelsome with me all the time and it makes him think I don't care for him . . . He doesn't seem to think that I can't stand it.

From a young mother of three who nearly died at each birth:

I live in constant dread of having another child and leaving my children for someone else to raise. My husband tries to stay away from me as much as possible but that isn't right for a strong man only thirty-six.

The young wife of a lake fireman, warned by her doctor that the bearing of a third child will kill her, writes:

I long for my good husband's love but we can't have it the right way because he said he would go crazy if I died. . . . Every week my husband come home I can see it is telling on him.

From the wife of a laborer with four children who practises continence in order not to enlarge his family:

I am afraid this practice will cause him to go wrong. I love him so well that I can't bear the thought of him being with other women. . . . Tell me what I can do so I can meet my husband's desire and not get pregnant.

A husband wails:

My wife has been away from me seven years and if I could show her something whereby she would not have any more children she would come back.

From a Kansas woman who has borne five:

We have also practised continence, but of course it always ends in and causes all kinds of quarrels and hard feelings, and even brings up the subject of prostitution, and what woman, if she loves her husband, would send him to such places to get what she could give and would gladly give, if only she could feel sure there would be no more unwanted children from such intercourse. I have brooded and worried over this state of affairs till I have become bitter and utterly discouraged, and how can a woman be a happy mother and a fit companion for her children in such a state of mind?

From a West Virginia woman of thirty-six, the mother of six children:

My husband and I are very affectionate toward each other, and we are both ignorant of how to protect ourselves from more children other than to live apart, and we just can't do that.

From Oklahoma comes a pathetic appeal:

deare unknowin friend am writting you in regard to Birth Control am the mother of 7 children 6 living my Husband Has plagre he went a way to taik treatment for plagra Has bin a way two years Viseted Home twice I miss carried Both times he came home the last time I most Crossed the deth Vaillie so he wrote me he was coming home to stay so i didnt think i could staend another miss carrage so i told him not to come home untill i were to old to give Berth to children He didnt come home my Children are hart Broken Because there daddy dont come Home they cant under stand why i dont want Him to come Home the oldest is 14 the youngest is 3 years old so if you will give me informaetion how to keep from conceiving i will aprechiate it as i love my Husband and would very much like to have him at home.

ABORTION THE LAST RESORT. Small wonder that wives so desperate resort to abortion. "Our examinations," says Dr. Max Hirsch, an authority on the subject, "have informed us that the largest number of abortions [in the

United States] are performed on married women. This fact brings us to the conclusion that contraceptive measures among the upper classes and the practice of abortion among the lower class, are the real means employed to regulate the number of offspring." Dr. Benjamin T. Tilton declares:

The United States leads all other countries in the number of abortions performed yearly. The laws enacted to suppress it have had very little deterrent effect. The practice is most common among married women, particularly of the poorer prolific classes, who already have children and cannot afford to add to their number. These mothers, on finding themselves pregnant again after repeated pregnancies, resort in desperation to this immoral and dangerous means of relief. Some women seek this means not only once but a dozen or twenty times. . . . It is not exaggeration to say that thousands of women die annually from the effects of these illegal abortions and other thousands become chronic invalids or permanently sterile.

Dean Inge ³ states that abortion is "exceedingly common" in the northern towns of England. "Its great prevalence in the United States is to be attributed mainly to the drastic legislation in that country against the sale and use of preventives, to which many persons take objection on moral or æsthetic grounds but which is surely on an entirely different level from the destruction of life that has already begun. The 'Comstock' legislation in America has done unmixed harm."

SLAVES TO MATERNITY. Some of these victims of incessant maternity feel themselves to be in a very literal sense *slaves*.

From a woman married seven years, mother of six children:

At the age of 26, I look 40. Just through ignorance of Birth

³ "Outspoken Essays," p. 74.

Control. Being poor, I have no way of enjoying myself. It's the wash tub one day, the sewing machine the next.

A Maryland wife pleads:

Please help me a poor young woman. I am 17 and I have three small children. Married at only 14 years old and don't know what to do. I work so hard that I am almost dead.

From a Texas mother of five who is "a wreck" and would gladly give her children away to some one who would care for them:

When I was a girl I worked in the field and wasted my life and made myself sick trying to take care of my mother and tend the children for her, when I could not be in the field. I know father will go to town and tell people what he has done, raised 11 children when he ought to be at home under the bed with his head hung down. He never done no such of a thing; mother did, and cared for him besides. Sometimes I can hardly keep from hitting him to save my neck. What are we to do? Can you do something to help us.

From Kansas comes the bitter testimony:

I am one of eleven children and the struggle for existence has almost been more than we could stand at times. I've seen my mother go in rags in order that we children could have an education and enough to eat. I've seen her in the very depths of despair over our condition. I don't want my children to see me suffer as she did. So please do what you can for me.

A wife at twenty-one who nearly died in having her first child confesses:

Walking through hundreds of miles of fire could not have been as bad as what I suffered. I am afraid now to give birth to another and that fear is causing me to break my health with drugs. I am pale and weak and sickly. If only I knew what to do! Lincoln freed the negro slaves but who is going to free women from the bonds of slavery that holds them?

A poor woman who has had many children and is being "killed by inches" by child-bearing flares into indignation:

I would go to jail and to Hell itself if I knew I was helping the poor who do not understand Birth Control. Why should it be kept from us? Why can't we have the right like the wealthy people? Are we not human . . . ? Why all this mortification of the poor because we don't know any better . . . ? I always feel I have to help my mother, a mother that was devoted to each and every one of us but could not afford to bring us to where she liked to see us because she was worn out with work. She could just about feed and dress us with the earnings of a father's pay. Must we nowadays live the same way? Why not just have two or three children and bring them up right rather than have a dozen and treat them like lambs and goats out in the pasture? ⁴

THE EMANCIPATION OF WIVES. Knowledge of how to regulate the size of the family is in the United States a

⁴ What even women of the middle class used to endure appears from these findings of the eminent French sociologist G. Vacher de Lapouge: "During a stay of two months at my home in Poitiers [France], I had occasion to look through the register of baptisms, marriages and deaths from 1800 to 1900. This genealogical research among a large number of families of the middle class, based on births, survivals, infant deaths, etc., etc., led to interesting results. During this period no method of control was used. Conception took place by chance and death took care of the excess. The first birth came generally within less than a year after marriage and the rest at intervals—longer in some cases if the mother nursed the child, less if she did not. Sometimes pregnancies were so near together that an older child died because deprived of its mother's milk by a later birth. This permanent state of pregnancy and suckling caused the premature death of many women, and these wives were replaced by others, since the children born needed a woman to take care of them—and the new wife continued the tale of child-bearing. The number of children who lived to become adults was not much greater than we have today, since of ten or twelve children born only two or three grew up to found a family. Thus the absence of control succeeded in multiplying suffering and death in prosperous and normal families which would otherwise be admirably fitted to live happy lives, and all this suffering did not result in an appreciable increase in population."

class privilege. The organized movement for the emancipation of women does not demand for wives unhindered access to knowledge of the means of limiting the family. The movement is in the hands of women of the classes, who already have such access. And yet, to hosts of hollow-eyed mothers, release from the bearing of unwanted children would have a thousand times the practical value of access to the professions, or the right to vote and hold office. Until she is rid of bondage to the results of the sexual demands lawfully made upon her by her husband, what is called "emancipation" is a mockery to the wife of the poor man.

THE OLD DISPENSATION. I was entertained once in the mansion of a railroad president who had about his board his twelve handsome, intelligent, and well bred children. The mother was hale and strong, for always she had had every service that money can buy.⁵ Such families are desirable from every point of view. But the huge huddled families half reared by a despairing mother-drudge on the wages of a common laborer belong to the old dispensation, when from 3 to 4 per cent of the population were buried each year. They are a crime now that only a little over 1 per cent die in a year. Cave, hut, hovel, and shack do not fit into the modern scene; nor do their large broods of neglected, infected, ill nourished, half-clad, unschooled children fit into the modern democratic community; no more do illiterate, ignorant, overburdened wives, without a gala dress, who never go anywhere or hear anything, whose only recreation is gossip with other women at the village well or while driving up the goats!

⁵ Owing to the absorption of working-women into industry and the checking of immigration, the sources of help for mothers with small children are drying up in the United States. In the decade of 1910-20, although population grew 15 per cent, the number of female domestic servants fell off nearly one fourth.

CHAPTER XXII

RELIGION AND ADAPTIVE FERTILITY

IN view of the notorious conservatism of institutionalized religion one is not surprised to find the world's great religions altogether ignoring the crisis brought upon mankind by the recent triumphs over dearth and disease.

BRAHMANISM. Although in India the evils of overfertility fairly shriek at you, Brahmanism insists that the one object of marriage is procreation, preferably of a male issue. The use of any contraceptive method is "immoral" and "sinful." Says Wattal: ¹

Everybody marries, fit or unfit, and becomes a parent at the earliest possible age permitted by nature. . . . For a Hindu marriage is a sacrament which must be performed regardless of the fitness of the parties to bear the responsibilities of a mated existence. A Hindu male must marry and beget children—sons, if you please—to perform his funeral rites lest his spirit wander uneasily in the waste places of the earth. The very name of son, "putra," means one who saves his father's soul from the hell called "Put." A Hindu maiden, unmarried at puberty, is a source of social obloquy to her family and of damnation to her ancestors.

This attitude, no doubt, grew up naturally enough. To the ancient Hindu lawgivers numerous offspring seemed the guarantee of safety and prosperity, for the Hindus in

¹ "The Population Problem in India," 1916, p. 3.

very early times when the codes were drawn up were surrounded by hostile tribes. Most of these were matriarchal societies; so there survives a strong prejudice in favor of the birth of sons, which, however, in view of the actual relation of the population to the food supply is deplorable.²

CHINESE ANCESTOR WORSHIP. Sixteen years ago after some months of travel in the Flowery Kingdom I wrote: ³

It is believed that unless twice a year certain rites are performed and paper money is burned at a man's grave by a male descendant, his spirit and the spirits of his fathers will wander forlorn in the spirit world "begging rice" of other spirits. Hence Mencius taught "there are three things which are unfilial; and to have no posterity is the greatest of them." It is a man's first concern, therefore, to assure the succession in the male line. He not only wants a number of sons, but—since life is not long in China and the making of a suitable match for a son is the parent's prerogative—he wants to see his son settled as soon as possible. Before his son is twenty-one he provides him with a wife as a matter of course, and the young couple live with him till the son can fend for himself. There is none of our feeling that a young man should not marry till he can support a family. This wholesome pecuniary check on reproduction seems wholly wanting. The son's marriage is the parents' affair, not his; for they pick the girl and provide the home. In the colleges one out of twenty or ten, but sometimes even one out of five, of the students is married, and not infrequently there are fathers among the members of the graduating class. . . .

Moreover, the very atmosphere of China is charged with appreciation of progeny. From time immemorial the things considered most worth while have been *posterity*, *learning* and *riches*—in the order named. This judgment of a remote epoch when there was room for all survives into a time when the land

² Radhakamal Mukerjee, "The Foundations of Indian Economics," 1915, p. 17.

³ "The Changing Chinese," 1911, pp. 96-98.

groans under its burden of population. So a man is still envied for the number of descendants in the male line who will walk in his funeral train. Grandchildren, and, still more, great-grandchildren, are counted the especial blessing of heaven.

SHINTOISM. The national religion of Japan lays emphasis on the necessity of male children who will continue to perform the family rites and to make offerings to the ancestral spirits.

BUDDHISM. Buddhism opposes all taking of life, even that of insects. So we find the Buddhist leaders in Japan to-day denouncing birth-control as a form of destruction of life and may expect the same stand to be taken when the issue comes up in Burma, Siam, and Ceylon.

MOHAMMEDANISM. "Marry yourselves early," urged Mohammed, and added, "When a man marries, verily he perfects half his religion." Mohammedan law requires that *toute copulation commencée doit être terminée sous peine de péché*.⁴ There is no sign yet of contraception among the Mohammedans, and, in view of the attention their religion gives to the physical and the slight esteem it has for women, they will certainly be slow to adopt birth-control.

CHRISTIANITY. The historical position of organized Christianity has been, "*increase and multiply*." What emphasis on this text has meant in the way of the needless exhaustion of millions of wives—to say nothing of intensifying population pressure and breeding war—has given the church very little concern. Reacting against the sensual excesses of the pagan world, some of the Christian fathers went so far as to insist that sexual indulgence is in itself sinful. St. Augustine wrote, "No fruitfulness of the flesh can be compared with holy virginity." St. Jerome

⁴ Dr. Bertherand cited by Pearl: "The Biology of Population Growth," 1925, p. 111.

held, "Wedded women may congratulate themselves that they are next to virgins." St. Thomas Aquinas is even more explicit; he regrets that, as the result of original sin, conception can only take place at the cost of virginity.

Hence the doctrine that the only justification for the conjugal union is procreation.⁵ Hence also good churchmen sanction only with evident reluctance conjugal intercourse during pregnancy or after the child-bearing age. They are quick to condemn intercourse when conception is prevented, and some⁶ even deem it wrong to evade conception by taking advantage of the wife's intermenstrual period!

However, under the pitiless barrage of facts the Protestant opposition to birth-control is crumbling. The dean of St. Paul's Cathedral in London, Dr. W. R. Inge, as chairman of the British Commission of Inquiry into the Declining Birth-rate, gained an insight into the world problem of population which led him to declare: "Unless the devastating torrent of children can be stemmed our condition will certainly go from bad to worse. We know where we are with a man who says, 'Birth control is forbidden by God. We prefer poverty, unemployment, war, the physical, intellectual and moral degeneration of the people, and a high death rate to any interference with the universal command to be fruitful and multiply'; but we have no patience with those who say that we can have

⁵ Even so the child is "conceived in sin." It has been only half a century since the Presbyterian Hymnal contained the monstrous verse:

"Behold, I in iniquity
Was formed the womb within;
My mother also me conceived
In guiltiness and sin."

At present the Church of England is considering its Revision Committee's recommendation to eliminate "conceived in sin" from the marriage service.

⁶ The lord bishop of Southwark, e. g.; see "The Declining Birth Rate," p. 440.

unrestricted and unregulated propagation without these consequences."

In 1918 the bishop of Hull (England) declared before a Church Convocation: "If we are to have a League of Nations the Church must reconsider her attitude of blessing large families and saying, 'Be fruitful and multiply.'"

As recently as June 1, 1925, the bishop of Birmingham, when preaching before the Royal Institute of Public Health, used the following words: "Human welfare is now menaced by human fecundity. Vast masses are deprived of the uncramped freedom necessary for healthy existence. The change from large to small families is not to be impatiently condemned. Victories in medicine and hygiene may be disastrous for public welfare unless the desire for many children, which is natural and until recently laudable, is held in check."

At the same time the very conservative English Quakers issued a pamphlet stating that birth-control is compatible with religion.

On the other hand in 1925 the House of Bishops of the American Protestant Episcopal Church characterized birth-control as "hostile to the family."

THE ROMAN CATHOLIC CHURCH. No pope nor council has pronounced on the matter, but the Catholic authorities with one voice condemn as mortal sin all means of preventing conception on the ground that "they are unnatural, being a perversion of a natural function. Human faculties are used in such a way as to frustrate the natural end for which these faculties were created." This recalls the early protest against using chloroform in difficult child-birth; it was "against nature." Equally "against nature" are clothes, cooked food, medicine, schooling, telephones, motor-cars. In these days of vaccination, serum inoculation, dentistry, optometry, removal of

adenoids, plastic surgery, birth by Cæsarean section, incubator babies, cutting out of appendixes, and correcting by the knife such congenital malformations as cleft palate, harelip, and cross eyes, this horror of the "unnatural" seems out of place.

The Catholic Church makes some severe demands on the natural man or woman. She glorifies lifelong virginity, encourages the mateless monastic life, exacts celibacy of her clergy, refuses divorce, and makes fasting a valuable religious exercise; so it is a little startling to meet her in the lists as champion of the "natural!" It looks as if the Church wants to "have it both ways," lauding the natural or denouncing the natural on the authority of revelation, just as and when it suits her purpose.

According to a current expounder of Catholic doctrine:

The Christian family was not made for the State as for its final destiny. It was made for the glory of God. Fruitfulness in child-bearing tells eventually for the greater glory of God. God, however, has chosen to surround Himself with an extrinsic glory. He has created creatures to give him honor and praise. And the greatest honor and praise of this kind that can be given Him is that of man. It adds nothing to God's internal happiness, but is rather the expression and diffusion of God's love and goodness outside Himself. God, therefore, having provided this great happiness for His creatures, He wishes as many as possible to avail themselves of it. In this way he obtains His greatest external glory. The greater the number of souls that are added to the number of the elect, so much the richer is the music of nature's hymn of praise.⁷

So God gets more "glory" from three million people, bitterly squabbling with one another for the means of ek-

⁷ T. J. Gerrard, "Marriage and Parenthood: The Catholic Ideal," p. 117.

ing out a toilsome and wretched existence in a teeming country, than from one million living in comfort, contented and regardful of the rights and well-being of others! Such a conception of God's character shocks one; but how can you either prove or disprove it?

This recent stress on endless numbers sounds very strange when you check it against early-Christian utterances. Then St. Paul did not know God's wishes when he recommended celibacy to his flock; nor Tertullian when he declared, "Whether marriage be for the sake of the flesh, or of the world, or of having descendants; not one of these necessities so-called belongeth to the servants of God"; nor St. Augustine when he wrote, "'What,' say they, 'if all men should abstain from sexual intercourse, Whence will the human race exist?' . . . I answer, 'Much more speedily would the city of God be filled and the end of the world hastened.' " How the hosts of Christian anchorites who deliberately shunned marriage and propagation would have been startled to learn that they were offending God!

Unable to cite one line of the Bible as basis for their stand, the ecclesiastics resort to a strained interpretation of the story of Onan and his matrimonial relations with Tamar, as set forth in the thirty-eighth chapter of the book of Genesis. From the whole chapter any close student of early customs would conclude that God slew Onan not for his procedure (*coitus interruptus*), but for his evasion of the duty "to raise up seed unto his brother," "to build up his brother's house."⁸ Onan would not beget a son for his dead brother, possibly because he wanted his brother's property to be inherited by his own sons. This, at least, is the interpretation which the Jews, who may be

⁸ The obligation is fully defined in the twenty-fifth chapter of the book of Deuteronomy.

presumed to understand their Scriptures, put on it for many centuries before the Church existed.

When it is considered that more than two hundred millions of husbands and wives are being denied the only means of family limitation they are likely to apply with any success by an ecclesiastical dogma built on cobwebs; when, moreover, this ban is imposed by a hierarchy of celibates; what language can do justice to the fantastic character of the situation? Did Gulliver in his travels find anything more absurd than pious couples following the dictate of celibate priests in a matter of which the latter are presumed to have had no experience? It is like taking a blind man for a color expert!

Confronted with the fact that mankind now tends to double in sixty or eighty years and that, but for the spread of the practice of birth-control, the period of doubling would be constantly shortened by further reductions of the death-rate, the ecclesiastical moralists dwell on the prospects of staving off world saturation by augmenting our food supply. But this line was well met by Harold Cox when he said before the British Birth-rate Commission⁹—after showing that at its recent rate of increase the population of England and Wales would be far above two billions at the end of the twenty-second century:

Opponents of birth control may, of course, argue that the time has not yet come to make the choice; they may even go the length of asserting that England could still afford to go on doubling her population every fifty years, as she did in the first half of the nineteenth century. But such arguments and assertions only postpone the issue. If birth control is in itself immoral, it will be still immoral when our population has reached such a volume that the necessity for a reduction in the rate of increase becomes indisputable. When that time arrives, if

⁹ "Problems of Population and Parenthood," 1920, p. 316.

birth control is banned as immoral, we shall be forced to choose between various methods of death encouragement, such as infanticide, chronic under-feeding, periodic massacres, and the propagation of deadly disease. It would facilitate discussion in the present controversy if those people who today denounce birth control as immoral would plainly state which of these various methods of death encouragement they prefer.

The Catholic sociologist, Dr. John M. Cooper, while conceding "That, if the present *abnormally* high rate of increase should continue, population may at some far future day catch up with the available food supply,"¹⁰ contends that "the solution certainly can come and probably will come quietly, unobtrusively, and efficaciously."

It is:

a. *Defer marriage for women until not too many children will be born.*

Years ago the French economist P. Leroy Beaulieu observed:¹¹ "That Swedish women to-day delay their marriage until the average age of twenty-seven years does not prevent the Swedish population growing about one per cent a year. To hold population stationary a postponement until 30 or 32 years would be required." So Dr. Cooper's proposal contemplates that women defer marriage until their thirties when the bloom and ardor of youth are gone and after the urge of nature has been denied for fifteen years or more. So "natural!"

If one would know how these clerical notions work out let him consider the sad case of the Catholic Irish. In an article in the Catholic weekly "America" for May 1, 1926, the Catholic scholar Dr. J. J. Walsh in an article, "The Disappearing Irish in America," calls attention to the strange shrinking of the Irish from marriage. No other

¹⁰ "Birth Control," 1923, p. 41.

¹¹ "La Question de la Population," 1913, p. 301.

people on earth so shuns matrimony. Not one Irishman in a thousand is a husband before he is twenty; among us a sixteenth of the men in their nineteenth year are husbands. Not one Irish girl in two hundred is a wife before she is twenty; among us a quarter of the girls in their nineteenth year are wives. At age 35 less than 30 per cent of the Irish men are married and considerably less than one half the women. Among us the proportions are 77 per cent for men and 82 per cent for women. Dr. Walsh testifies, "The tendency of our race affects our marriage conditions over here in America and leads to the disappearance of many families."

Melancholy as is this deferment of mating long past nature's period, there is nothing mysterious about it. Their famines taught the Irish not to multiply rashly, and their priests taught them that birth-control is mortal sin. For them the only way out was putting off marriage far beyond the years of strongest sex attraction and fecundity. So out of the priest's horror of "frustrating God's design in nature" has grown a situation against nature, against race perpetuation, and against human happiness.

b. *Continence by the married.*

Experts in psychiatry will tell you what would result if such repression were undertaken by the common run of humanity.

So the churchmen, on the basis of their strained interpretation of a verse in the book of Genesis, bid mankind forgo even the simplest means of reconciling the normal sex life with the economic prospect and with woman's demand for a reasonable freedom in a matter which so vitally affects her health and happiness. Although no living creature is being harmed, loving spouses must deny the promptings of healthy human nature and submit to a way of life which for most would be a veritable martyr-

dom! Did one not realize the stubborn resistance which venerable authoritative organizations always offer to adapting their position to changed conditions, one would suspect that ecclesiastics *enjoy* tormenting people with preposterous and non-Christian taboos, or else that they are scheming to rid themselves ultimately of Protestants and all other heretics and schismatics by requiring their followers to outbreed and so supplant them!

NO WAY OUT. Carr-Saunders, the highest authority on the regulation of population, after surveying an immense volume of evidence, concludes that "customs restrictive of increase have been so widespread in the form of either abortion, infanticide, or prolonged abstention from intercourse as to have been practically universal."¹² Of these three means prolonged abstention from sexual intercourse, imposed as a social custom, is not found among the European peoples at any time. Abortion and infanticide were freely resorted to in the pagan world, but were brought under the ban, first of the Church and then of the law, until they ceased to play much of a rôle in the regulation of numbers. Medieval society sought to avert the undue growth of population by encouraging the taking of monastic vows and by delaying the marriage of dependents, such as farm laborers, house servants, and craft apprentices.

None of these historic means of regulating human increase is open to us now. Christianity, of course, will not and should not countenance abortion or infanticide, while the modern spirit sees no religious merit in celibacy and will not hear of allowing an upper class selfishly to restrict the marriage of underlings. There remain the lately discovered contraceptive methods. The churchmen, however, as if grimly determined to leave the devout no loophole of escape from the miseries of population pressure, arbi-

¹² "The Population Problem," 1922, p. 483.

trarily and quite without Biblical warrant forbid contraception as "anti-Christian." The Catholic peoples, it would seem, are doomed either to a monstrous development of celibacy or to the same fate as the peoples of Asia, who have never perceived that unregulated multiplication eventually thwarts human development and happiness.

CHAPTER XXIII

PROBLEMS OF ADAPTIVE FERTILITY

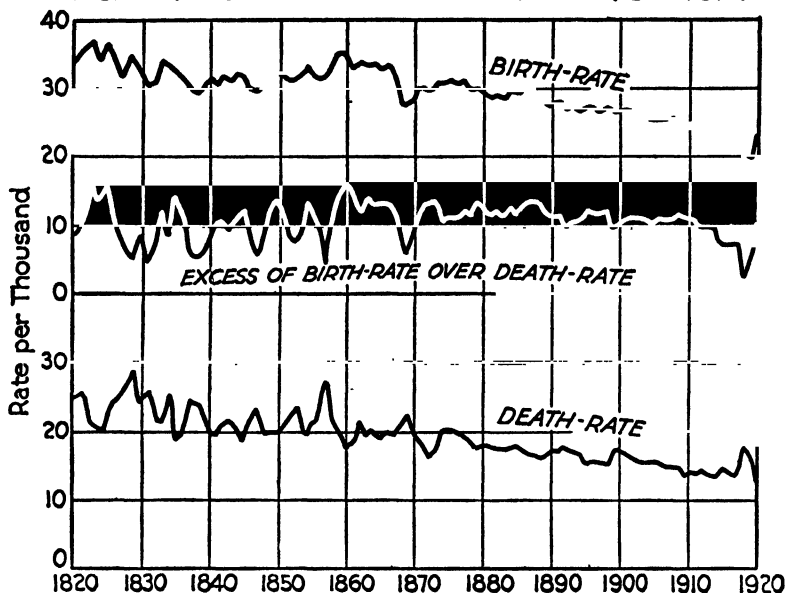
SINCE the aversion to the big family is the outcome of forces springing from the very marrow of modern civilization—necessity of more fully preparing children for life, commercial incitement to spend, democratic self-assertion, rising self-consciousness of women, and revolt against clerical control—it is bound to spread. Knowledge of methods of regulation will trickle from the sophisticated to the naïve and leak down from layer to layer in society. It will pass from the alert to the ignorant, from the progressive to the custom-bound. It will seep from the enlightened peoples to the backward peoples,¹ from the high-standard countries to the low-standard countries. Modern medicine and public hygiene are spreading like wild-fire. After seeing human life saved as if by magic the more thoughtful begin to wonder why wives should be always bearing now that children survive as if ringed by fairies, why we should go in for the big family when population is growing so fast that our grandchildren will be

¹ Knowledge of means of preventing fertilization is not altogether a new thing. According to Carr-Saunders ("The Population Problem," p. 177), "knowledge of these methods extends throughout South Africa, the Congo, what was formerly German East Africa, and probably elsewhere." "Theilhaber gives some particulars regarding their employment among the Jews, German tribes, Arabs, the Franks before their conversion to Christianity, the Greeks, and the Romans." "Generally speaking, however, it would appear that it is not until we arrive at the latest period of human history that we find these practices to be of considerable importance." (Carr-Saunders, p. 255.)

hard put to it to find the means of living as well as we do. So the biases against "tampering with nature" will yield to elemental necessity, and people will cease to be shocked by birth-control.

PARALLEL DECLINE OF FERTILITY AND MORTALITY. Were infectious diseases harvesting still the thick sheaves of eld, the stealthy percolation of contraceptive hints and

FIG.26- VITAL TRENDS IN SWEDEN FOR A CENTURY

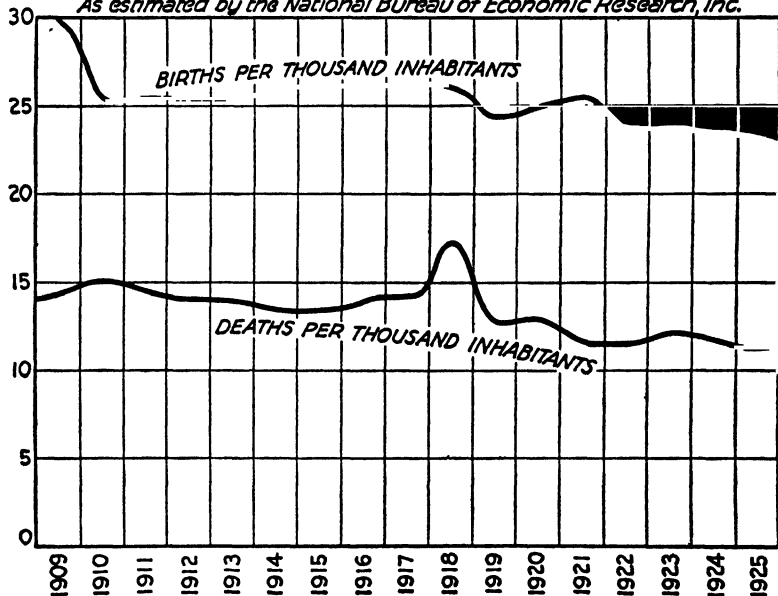


counsels would inspire alarm, like a creeping ataxia cast by a witch-doctor. Generally, however, birth curbing has *followed* life extension, so that, far from pulling down the rate of natural increase, it has only kept it from rising too rapidly. Take the fourteen European countries with adequate vital statistics and compare their records for the half-decade 1881-85 with those of the last half-decade before the war, viz., 1906-10. In *nine* of them the death-

rate fell farther than the birth-rate; so that in 1910 the margin of gain was actually broader than it had been a quarter of a century earlier, before forethought and prudence in the matter of family had given much evidence of its presence among the masses. Averaging the fourteen peoples, it appears that, while the number of annual *births* per thousand of the general population was *five* less at the end of the period, the number of annual *deaths* per thousand was *five and one half* less!

FIG. 27- CHANGES IN THE BIRTH AND DEATH-RATES IN THE CONTINENTAL UNITED STATES

As estimated by the National Bureau of Economic Research, Inc.



A better gage of reproductive tendency is the course of Pearl's vital index, i. e., $\frac{\text{births} \times 100}{\text{deaths}}$ or one hundred times the ratio of the birth-rate to the death-rate. The

higher its vital index the brighter is a people's prospect of survival. Now if we compare the average annual vital index for the first twenty years of this century with that for the last twenty years of the last century, we get this table:

	<i>Average of Annual Vital Indices</i>	<i>Average of Annual Vital Indices</i>	
	1881-1900	1901-20	
Denmark	171	195	increase
Norway	184	189	increase
Sweden	169	165	decrease
Holland	170	204	increase
Switzerland	140	152	increase
England and Wales	167	167	no change
Scotland	166	169	increase
New Zealand	293	266	decrease
New South Wales	247	259	increase
Victoria	206	208	increase
Italy	142	145	increase
Japan	172	154	decrease

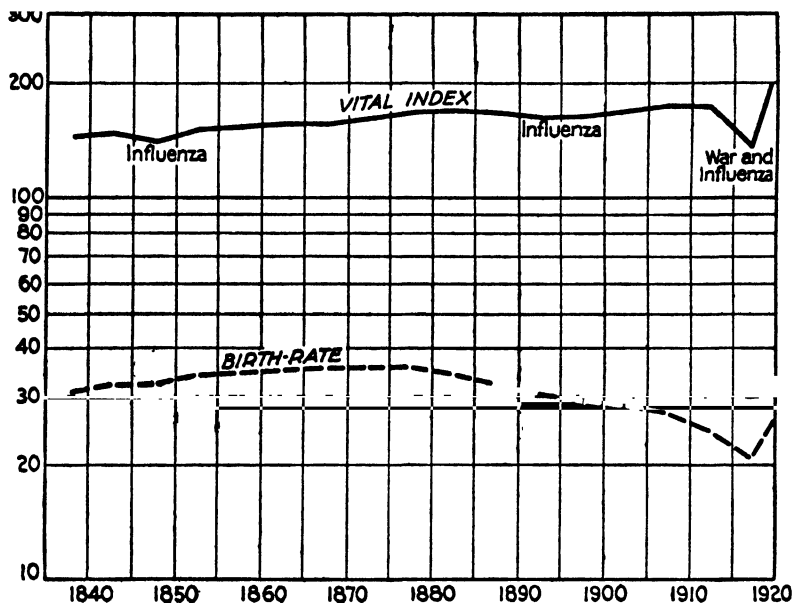
Eight increases and three decreases; surely no hand-writing on the wall! For the last seven countries, be it noted, the second figure includes the years of participation in the World War, with all that implies in loss of life and shortage of births. From the table it appears that among the peoples most modern in outlook and best acquainted with the technique of family limitation the vital index is rising rather than falling. In other words, *the fall in the birth-rate is more than offset by the simultaneous fall in the death-rate.*

Why, then, has it called forth so much excitement?

Because hot controversy rages about the morality of

family limitation, the fall in the birth-rate has attracted an enormous amount of attention. Every one has heard it commented on as "an alarming symptom," "a sinister tendency." On the other hand, few but vital statisticians,

FIG. 28- TREND OF VITAL INDEX AND CRUDE BIRTH-RATE
IN ENGLAND AND WALES
1838-1920



*Reproduced from "Studies in Human Biology." By Raymond Pearl thru the
of the publishers, The Williams & Wilkins Company, Baltimore, Md.*

life insurance actuaries, and public health officials mark the wonderful lowering of the death-rate in our time. It is not "viewed with alarm." No one lifts a trumpet against it. It has stolen upon us quietly like a genial south wind in February. And yet in most countries it quite offsets and neutralizes that falling off in the baby crop which has inspired so many gloomy prophecies.

RACE SUICIDE? Some recognize this yet wonder if the birth-rate may not keep on dropping until it passes the death-rate, and population shrinks. Let us acknowledge that this latter-day power of spouses to control parenthood is a thing so new that no one has the right yet to be confident as to its outcome. Only after watching for a generation or two shall we know what married folk will do with it. Nevertheless we may dismiss with a smile certain shrill prophecies, as, for example, that, if parenthood should come to be altogether voluntary, child-bearing will become a lost art. Such a forecast forgets the "tender instinct," which all psychologists recognize as a part of our natural equipment. It ignores, too, the irresistible appeal of the infant to the heart of the normal young woman. The desire for a baby of her own to dandle and cuddle and fondle develops in nearly every adolescent girl. Since it is easy to fix and strengthen this craving by an appropriate training of girls for motherhood ("mothercraft") there should be few fit couples who deliberately avoid all progeny.

Although one in eight native-born American wives is not blessed with offspring as compared with one in nineteen among the foreign-born, it is likely that in almost every instance the childlessness is involuntary or else from good cause. I concur with Professor East ² when he says:

Much capital has been made of the woman who prefers a lap-dog to a baby, the woman who will not forgo luxury for the sake of children, the woman who fears the loss of her beauty. . . . A great part of this criticism is an insincere attack at an obviously vulnerable point. . . . People who do not desire children form a negligible fraction of the population. Our parental instinct is too ancient to be changed easily and it is seldom satisfied with

² "Mankind at the Crossroads," 1923, p. 264.

the advent of a single child. The poor little lady riding round in solitary grandeur would rarely hesitate a moment if she could exchange her jewels and limousine for a child of her own to fondle; and it is a shame to cause her further heartaches by holding her childlessness up to ridicule.

What we have to fear is not wilful childlessness but the prevalence of the one-child or two-child family, which means that the parents are not even replacing themselves and that their stock is dying out. Sure is the fate of any people among whom this dwarf family becomes common. They miss the point of this book who imagine I would persuade my readers to have fewer children. Small chance *they* will have too many. It is the dullards I have in mind, who will never read this or any other serious book, who are multiplying much too fast because our society has done its best to keep them from learning how to curb their fertility. From the racial point of view sound capable couples who without good cause close their families with a wean or two are parasites on the brave couples who elect to produce *more* than the three children which to-day liquidates our debt to our ancestors. Oblivion will surely be the portion of those couples who practise the fatal arithmetic, "One and one make one."³

However, we have access to thousands of years of human experience in societies in which all felt free to

³ Since this book treats only the *quantitative* side of population I shall not go into the *selective* aspects of birth-control further than to point out that at a certain stage of the movement, when many of the alert, the forelooking, and the wife-considering stint their increase, whereas all the stupid, the superstitious, and the wife-killing males procreate heedlessly, birth-control seems to be taking the brains out of the race. But at a later stage, when knowledge of family limitation methods has become nearly common property among spouses, the outlook is not so dark. For the giddy and the selfish will plume themselves on their shrewdness in rearing but one or two children; while the responsible, the conscientious, and the noble will go on to rear a real family—say, five or six children.

regulate the size of their family by abortion or infanticide, yet we find no people using these so intemperately as to court decline or extinction. Now why should we expect birth-control to be used more recklessly than were these earlier methods of regulation? The latter, to be sure, are repugnant to us, but they were probably little repugnant in the societies and times which gave them the sanction of social custom. If, nevertheless, parents then went on to rear a sufficing number of offspring, it must have been *because children were felt to be worth while*. If the bairns possessed such value in the past, why should they possess less value in the future?

POPULATION DECLINE IN THE CLASSIC WORLD. Some expect that adaptive fertility will cast over the advanced peoples a dismal blight such as fell upon the classic world in the later period of the Roman republic. But the cause of that ancient blight was something not present in modern society. Listen to Beloch,⁴ the greatest authority on the populations of antiquity:

If the growth of the population of Greece ceased in the third century before Christ while in the second century a decline set in which appeared also in Italy and lasted through the first century B.C., we have a problem deserving the closest attention of the historian. Since the phenomenon is general its causes must be general. We may not charge it to the Roman domination, for the decline set in in Greece when the peninsula was still free of a foreign yoke. Nor can wars be the cause; for the ancient world never knew a more tranquil time. . . . Nor were the Mediterranean countries in this period devastated by epidemics. The corruption of morals, so much declaimed about both then and now, cannot bear the blame, for it is doubtful if Greek society was more corrupt in the second century B.C. than it was in the fourth. As for Italy the number of Roman citizens grew in the first century of the Empire, although at that time morals were

⁴ "Bevölkerung der Griechisch-römischen Welt," 1886, pp. 503-505.

certainly not better than they had been in the last century of the Republic. Moreover, the moral blight attacked chiefly the upper classes, leaving the broad strata of the population untouched. The reblooming of the population of the first century of the Empire proves that the previous decline was not due to impaired vitality.

The real causes lie deeper. Chief among them stands the steady progress of slavery. When Mnason of Elateia brought a thousand slaves into Phocis, which until then had known only free labor, his fellow-citizens reproached him for robbing a thousand freemen of their daily bread. They were right. Every slave introduced into Greece, Sicily, or Italy cramped the free population. The free laborer simply could not compete with the cheap slave labor. He might count himself lucky to feed himself, let alone setting up a family and rearing children. Moreover, the incessant concentration of wealth into fewer hands made citizens into proletarians.

So we see that, whenever an ancient state went over to slave economy, the growth of the free population ceased.

There is no point either in citing the drastic but futile legislation of the Emperor Augustus to prevent the dying out of the old Roman families. He was dealing with aristocrats, drunk with wealth and power, who could evade the fetters of marriage and family without in the least forgoing the satisfactions of sex. These self-indulgent celibates, fondling their concubines and slave-girls, have no true counterpart in modern society.

THE CASE OF CONTEMPORARY FRANCE. France is pointed out as an awful example of what birth-control leads to. However, the case of France is not quite as it is pictured. The French are not declining in numbers; they are only failing to grow. There is no "depopulation" save of certain high infertile districts settled up in the old days of population pressure, which do not yield one a decent livelihood. France is not maintaining her old mili-

tary, political, and commercial position simply because the backward parts of the world are overtaking her. France has not gone back or stood still; but Germany, Russia, Italy, Japan, the United States, and Brazil have come forward. Such a change of relative positions was inevitable, and there is no remedy.

Again, the outlook for the French would be much brighter if only their mortality were not so high. Seventy years ago England and France were abreast in this respect. Now England's death-rate is near a third lower; though, to be sure, she has it over France in the age composition of her people. The average duration of life in France is less by three years than it is in England or the United States. Her tuberculosis death-rate is much higher than in Spain, Italy, or Germany, and is twice that of the English-speaking peoples. Then consider her infant mortality. In 1923, 761,861 babies were born in France; in England and Wales only 758,386. But the latter lost but 52,362 in the first year, while the former lost 73,283.

The root of the contrast is said to lie in the individualistic resistance of the French lower classes to sanitation. Comments an American observer, Professor E. C. Branson of the University of North Carolina, after five months' study of French rural life:

The privacy of a farm home in France must be respected. It cannot be invaded without risk. Behind its walls the family lives as it pleases, without let or hindrance. It is their sacred right. How they live is nobody else's business. And not always but commonly the French peasant family pleases to live like pigs in a litter—all for the sake of hoarding money and owning interest-bearing securities. They live in thousands in caves like the troglodytes of twilight times. There are today miles of cave dwellers along the Cher river near Loches in Touraine and elsewhere in France as in Arthur Young's day, and in these holes in the limestone bluffs the peasants ripen their cheeses and rear

their children in foul damp atmospheres today exactly as they did a thousand years ago, regardless of appalling death rates.

But the rights of privacy are no more stoutly maintained among the cave dwellers than in the peasant homes of the better sort in France. As a result birth rates are low and death rates are high. By 1950 the excess of births over deaths will be zero, and recruits for the army and navy will have disappeared. The French are aware of it and mightily disturbed about it, but nothing can be done in rural health promotion and disease prevention because the farm homes are sealed and steeled against invasion. Feeble beginnings in public health work in country areas are evident in only three of the ninety-odd departments of France. I mean health work of the sort that is common in American states. Free clinics and dispensaries are common for the sick in many or most country towns in France, but home sanitation and hygiene are almost unknown, because of the sacred rights of the French family to live in such concealment and privacy as it pleases.

Then there is the "marriage of convenience," the purpose of which is to lift the contracting families in the social scale, to strengthen their business connections, or to increase their political influence; all of which turns upon the ability of the family to make the daughter tempting with the largest possible *dot* and the son tempting with the largest possible marriage portion. The fewer the children the greater the chance to advance the family by marriage contracts. For two children the French father and mother must accumulate two fortunes. If there be three children, a third fortune must be made. This motive limits especially the families of the middle and aristocratic classes.

Peasant families are small because the French father is restricted in his right to will his property. With several children the peasant runs a risk of having the home farm broken up after his death into plots too small to maintain

a family in decency. Hence he wishes to rear but two children: a girl who, fitted out with a *dot*, will be married off, and a son to inherit the homestead. French sociologists argue that if the peasant had the right to will the homestead to one son, he would be more willing to rear a real family, for children are distinctly an asset in small-scale farming.

The French therefore constitute a special case, and their behavior may not be taken as a typical result of acquaintance with the means of birth-control.

MODERN INSTANCES. Let those who fear a general "birth strike" take heart from the experience of New Zealand. We are told that there information on how to limit families "has been universally available for more than a generation. Preventives have been on sale by chemists and specialists . . . Doctors, nurses and private individuals are free to give information. . . . The artisan class and the factory workers are now fully aware that there are preventives and that they can get them if they want them."

Here, no doubt, is the explanation of the decline of a third in the fertility of the women of New Zealand between the decades 1876-85 and 1906-15. But during this period such progress was made in life-saving that, just before the World War, the annual natural increase of New Zealand was 17.32 per thousand, which would double the population in about forty years. Thus far, at least, the New Zealanders betray not the slightest intention of dying out.

Then there is the case of Holland, where there has been some dissemination of knowledge of contraceptive methods ever since 1882. No legal obstacle has been thrown in the way of such propaganda, and the Nieuw-Malthusian Band has forty-three trained women instructing the poor

in these methods. Yet there has been no marked flight from child-bearing. The birth-rate has declined from about 36 per thousand in the early eighties to 28 in 1920. Nevertheless the Dutch stock is thriving, for the death-rate has declined even faster than the birth-rate. Whereas about 1880 it was 23 per thousand, by 1920 it had sunk to 12. In 1880, 27 out of a hundred babies failed to live a year; now all survive but six. In the Roman Catholic provinces, where contraceptive methods are not generally used, birth-rates and death-rates are much higher than in the other provinces. There is here exactly the same relation you find between Catholic Quebec and Protestant Ontario. Ontario has but two thirds the birth-rate of Quebec, but its natural increase is no less.

SOCIAL CONTROL OF BIRTH-CONTROL. Since the wife's attitude toward the full nursery is bound to count for more in the future than it has in the past, and since it is a most exceptional woman who is not broken down by bearing a dozen or fifteen children, the old-fashioned large family is likely to become rare. The improvident poor who spawn unthinkingly will be regarded with less sympathy and indulgence than hitherto. The prudent and prospering will be less disposed to succor them and help them rear their swollen families. Once conception is well under control, rarely shall we see a willed family of more than six children, save in the case of couples, who, besides being well off, possess gifts which they feel it their social duty to hand on without stint.

In a well-cared-for people of normal age make-up, 30 births per thousand annually means either heavy emigration or early overpopulation; 20 births means a moderate rate of growth; 10 births means eventual extinction. Now, there is no way of foreknowing what the birth-rate will be when no unwanted baby is born. We cannot be

sure that, prompted solely by private motives, couples will care to bring into the world enough offspring to perpetuate themselves as a class or as a people. This consideration brings us squarely up to the question, "Can birth-control be controlled by society?"

THE STIMULATION OF FERTILITY BY MORAL MEANS. It should be well understood that responsible persons are not urging the removal of all legal obstacles to the dissemination of contraceptive information. To allow conscienceless commercial interests to make such information the common property of adolescents would invite breakdown of sex morals. What is sought is the establishment of clinics where married women who are entitled to it may, for a small fee or no fee, be instructed orally as to means of preventing conception.

Nor is this restriction the only means of safeguarding the interests of the race. As more and more in a given society the facts as to current population drift are gathered and made known, there will grow up a public opinion as to the duty of the normal married pair. If babies are a deluge, there will be ridicule or condemnation of over-large families. If the baby crop is so scanty as to threaten the national future, couples rearing a full-sized family will be favored and honored, while child-dodging couples will be disdained and shunned.

In the degree that children are regarded as too few there will spring up *a social cult of children*. Religion, literature, art, the stage, the screen, the platform, and the press will stress the charm, the preciousness, the possibilities of children, and make light of what they cost. Parenthood and family life will be gilded and glorified just as soldiering and war are gilded and glorified in a militant society.

Would the birth-rate respond to such organized stimu-

lation? Social psychologists are not prepared to say how much the attitude of the average married pair toward family increase is determined by private motives and how much it is amenable to social motives or to public opinion. If the latter has a large influence, then the spread of birth-control gives no occasion to worry; for society will be able so to control such control as to safeguard its racial future. In a general way the size of the baby crop could be regulated by current public opinion as to the preciousness of children, and by graduating its disapproval of those who, from light or unworthy motives, fail to come up to the social standard of prolificacy.

As I see it, fertility *does* respond to the social factor. In 1903 President Roosevelt, by his vigorous denunciation of "race suicide" on the part of successful and well-to-do American couples, brought on a wide public discussion of the ethics of the microscopic family. Thereupon came heart-searching and a great reversal of attitude on the part of many society people. Within a few years young wives bred in luxury were proud to be photographed in the midst of their four or five children. If social opinion and example can make any hideous feature of fashionable female apparel—e. g., the hoop-skirt or the bustle—seem beautiful and desirable in the eyes of women, how much more ought a social cult of childhood make a full nursery seem desirable; for in this case the propaganda *has instinct on its side*.

THE STIMULATION OF FERTILITY BY ECONOMIC MEANS. The rearing of a child means the shouldering of a growing burden which, nearly everywhere but on the farm, must be carried for at least fourteen years. For those who highly educate their children, of course, the burden, ever heavier, is borne several years longer. Now, in France, where since the war nationalists, militarists, capitalists,

and the Church have united in a determined attempt to stimulate birth release, the "repopulationists" believe that, if parents are aided in carrying such burdens, they will be willing to shoulder more of them. It is common for the departments to offer bonuses for the production of children—e. g., 300 francs for the third child, 350 for the fourth, 400 for the fifth, and a progressive increase of 50 francs for each additional child. The practice is spreading rapidly, and the bonuses are becoming larger.

Since 1918 the practice of family allowances to government employees has become general, so that now at least a million persons come under such provisions, and the amount annually disbursed is not less than 400,000,000 francs.⁵ The allowance runs 440 francs a year for the first child, 720 for the second, 1080 for the third, and 1260 for the fourth and subsequent children. Family allowances are almost universally made to public employees in Belgium, Holland, Germany, Sweden, Austria, Switzerland, Finland, Poland, and Jugoslavia.

The movement has made such progress in the field of private employment that in Germany it is probably applied to four or five million. In Belgium, Holland, Czechoslovakia, and other countries at least an additional million are paid in this manner. The number of workmen in French concerns paying allowances totals nearly three millions, or over one third of all the wage-earners and salaried workers outside of agriculture and domestic service. The total amount annually distributed is somewhere between 750,000,000 and 900,000,000 francs. Among the benefits are: (1) monthly allowances for dependent children, (2) lump-sum maternity benefits, (3) nursing benefits to the mother after childbirth. In 1924 the average monthly allowances were as follows:

⁵ The reader should not forget that the value of the paper franc is about five cents.

First child	19 francs
Second child	27 “
Third child	35 “
Fourth child	43 “

The maternity benefits average 170 francs for the first and 140 francs for the subsequent births. One fifth of the funds make a nursing allowance for a few months to the mother who nurses her baby.

The birth-rate among the families entitled to benefits has shown no tendency to rise. It has, however, remained constant while the general birth-rate of France since 1920 has declined. The allowance, of course, covers but a very small part of the expense of a child. There is, however, no fixed limit to the distance society can go in this direction. We can imagine society assuming half, or three quarters, of even *all*, the necessary expense which a child entails. How much such a shifting of the economic burden of child-bearing will stimulate births depends on what is the real root of the reluctance to add a child to the family. If it is chiefly the *economic* cost, then in proportion as society shoulders this cost families will expand. If, on the other hand, it is the *physiological* cost of bearing children and the mother's burden of family care which constitute the main stumbling-block, then economic assistance will not much affect the birth-rate. It would be necessary to modify the attitude of wives toward maternity and child care and give children a greater value in their eyes.

SECT-MAKING POSSIBILITIES IN THE PROPAGATION QUESTION. Even if social control of birth-control should prove but a broken reed, it does not follow that the people is fated to die out and its place taken by the children of strangers. National self-extinction is a fearsome bugaboo worked usually by schemers who have an ax of their own

to grind. So far no healthy prospering people has ever committed suicide. In case it should come to be generally recognized that births are altogether too stinted, we shall see thoughtful and conscientious persons withdraw—as did the religious sects of an earlier day—from association with egoistic worldlings, band themselves into churches or ethical societies, and bring up their children to regard unwarranted contraception as a sin and the rearing of an ample family as a sacred duty. I say “unwarranted,” for it is one thing for the newly-wed frivolously to sidestep their clear responsibilities; it is quite another thing to resort to contraception after a fine family is in being and more births would hurt the health of the mother or becloud the prospects of the children.

THE PROTECTIVE RÔLE OF SOCIAL EXPERIENCE. Interference with birth is unescapable now that interference with death is so general and successful. To cut the number of deaths in two, yet do nothing as touching births, would be to upset the equilibrium of nature, thereby dooming mankind to an ultimate future of poverty, misery, and despair. Nevertheless let us concede frankly that birth-control is an edge-tool on which humanity at first may cut its fingers. Even now we see thousands employing it with a frivolity and thoughtlessness profoundly shocking. It will take time for those inhibitions to grow up which will make it less dangerous. The introduction of birth-control, like the introduction of fire, tight dwellings, sea-going craft, cities, gunpowder, electricity, and air-planes, is fraught with perils as well as benefits. Only gradually and out of the lessons from experience will our race learn to use it reasonably rather than abuse it.

Part Two

INTERNATIONAL MIGRATION

CHAPTER XXIV

POPULATION TENDENCIES OF THE ORIENT

WHILE the spread of adaptive fertility among peoples of the European background and culture begets the hope that they will never multiply themselves into squalor and misery, the larger half of humanity stands religiously committed to a family system suited to a rabbit-warren.

A moiety of mankind is concentrated in Asia between the meridians of Yokohama and Bombay. But Asiatic also are the Afghans, the Persians, the Turks, the Arabs, while the peoples of the Nile valley and Northern Africa possess an Asiatic culture. Indeed, it is safe to say that three fifths of humanity take what may be termed the "Oriental" attitude toward sex and offspring.

To Orientals generally the natural inferiority of the female sex is self-evident. With the exception of the Burmese and a few small peoples, the Orient exhibits flagrant masculine domination. If a woman attains to dignity and respect, she is either the darling of a hero or the mother of sons; i. e., her value is but a reflection of her importance to the all-precious males. Asiatic religions and philosophies, save only Buddhism, consecrate this notion of the superior worth of the male sex. Until they are roused from without the women themselves accept the low rating which men's opinion assigns them.

Asia's reverence for the mother of many sons would appear to be a relic of an ancient "preparedness" program,

a heritage from a time when the tribe, the people, the realm, deemed its security and perpetuity to be bound up with the number of tall spearmen it could muster. Then, too, Asia is monarchic to the marrow, and royalty is likely to see with the eyes of its recruiting-officers. So ancient militarist Asia encouraged stocking up with sons just as modern militarist Europe encourages stocking up with cannon, tanks, and airplanes, not forgetting, however, to honor the mother of boy babies. The embedding of this propaganda in religion put it beyond the reach of rational criticism, so that the later filling up, even cumbering, of the land with people could not affect it.

Women much more than men have cause to flout the dogma of one's duty to reproduce without limit. Among ourselves, to be sure, this is not so plain. When children cannot be put to steady work until fourteen, or even sixteen, years of age, the strain on the father grows as his family grows. But it should be borne in mind that as yet the bulk of Oriental laboring humanity have not the least intention of schooling their children beyond infancy. From its eighth year the child's services may be worth its keep, and in its youth it may yield the father a handsome profit. Moreover nearly a quarter of mankind are Chinese, and in China the burden of the child on the parent is lighter than with us, while the benefit expected from the male child is much greater. The laboring Chinese look to their sons to keep them in their declining years. An earning son is virtually an old-age pension, so that the parents of one son are pitied while the parents of many sons are envied.

On the other hand, the physiological cost of bearing and nursing infants is no less for Oriental women than for our women, while the care and attention the child requires is the same. Hence, below the small servant-keeping class,

there can be no comparison between the sacrifices the bearing of a child a year imposes on the mother and the sacrifices it imposes on the father. One has only to mark how age-stricken is the Oriental mother of a family in comparison with the father, who, nevertheless, is years older. Among the millions in mud huts the bearing and rearing of ten children instead of five imposes on the woman perhaps *five times* the burden it imposes on her husband. If this is so, then the women, once their eyes are open, ought to rebel against the worship of prolificacy with five times as much energy as their men.

Because it is so unequal in its incidence upon the sexes, the large family is, in the Orient much more than with us, bound up with patriarchalism. There every advance in the self-consciousness and independence of women smooths the way for the practice of adaptive fertility; while the continuance of male domination and the systematic mental enslavement of females delays it. So many groups of Oriental men have a selfish interest in upholding—for others—blind procreation that the custom will hardly be overthrown until its chief victims, the women, join their protest to that from the handful of enlightened men. But there is no prospect of an early emergence of the female sex in India or China. Generations must pass before the wishes and opinions of the wives there count with their spouses as they do in Western Europe and the United States. Until then propagation will hardly depart much from its present lines.

And what are these lines? Let us first consider India, for the facts as to the Indian population are known.

UNIVERSALITY OF MARRIAGE. "Practically no one is unmarried in India," declares the Indian leader B. K. Roy, "except deformed persons, saints and prostitutes." The

General Report of the Census of India for 1921 observes: ¹

The most prominent feature of statistics regarding civil condition is, as it has been always in India, the universality of marriage. . . . With the Hindus, this natural tendency is reinforced by social and religious sanctions of great antiquity. Religion in the West, as Risley pointed out, usually makes for celibacy, while in India it throws its weight almost wholly in favour of the married state. The Hindus, with whom marriage is a sacrament, forming as they do the predominant portion of the population, have affected profoundly the attitude and social practices of other religions. Musalmans, the bulk of whom are converts from Hinduism, have been affected to a varying extent by Hindu influences, and nowhere have these influences been so effective as on marriage-usage. Jains are dominated by Hindu influences in this regard: . . . Marriage amongst Animists is adult, and the remoter is a tribe from Hindu influences, the higher is its age of marriage. The Indian converts to Christianity have been little influenced so far as early marriage is concerned.

EARLY MARRIAGE OF FEMALES. The words of public documents are well weighed; yet the General Report of the Indian Census of 1881 declares: ² "Among the higher classes of all denominations there is the general feeling that the paternal hearth is disgraced by the presence of a girl who has arrived at womanhood unmarried." The same document cites ³ the explanation by Mr. Baynes of the Bombay Census:

According to the ideal code of Manu every man ought to marry in order that he may have a son to perform at his death the sacrifice to his ancestors, and pour out the customary libations to their spirits. Without such ceremonies, the father's soul cannot be delivered from the hell called *Put*, hence the name

¹ Page 226.

² Page 59.

³ Page 85.

“putra” given to the son. As regards the father of a daughter it is his duty to see her marry as she is put into the world to become a mother. The same law lays down that the proper age for a husband for a girl of eight is twenty-four, and for one of twelve is thirty. Contrary to the practice in the epic age, the choice of a husband by the girl appertains to a lower order of marriage than the bestowal of the hand of a daughter by the father upon one of his own choice.

No one has set forth the startling facts as to child marriage better than the Indian sociologist P. K. Wattal: ⁴

In Bihar and Orissa between the ages of 5 and 10, 13 per cent of the boys and 22 per cent of the girls are married; while in the district of Darbhanga, which occupies the place of honour, 48 per cent of the boys and 62 per cent of the girls are married at these ages. . . . Under the age of 5 there are in the Hindu female population 18 girls *per mille* who are married, while the corresponding figure for Mohammedan girls is only 5; between the ages of 5 and 10, while the Hindu figure is 132 per 1000, the Mohammedan figure is 65 or just half as much. . . .

In the case of the female population up to the age of 15 there are practically no girls married in England, while in India 20 per cent are married at those ages. At the age of 20 there are only 12 girls in a thousand that are married in England, while in India 80 per cent are married at those ages and the unmarried either belong to *kulin* families and cannot find suitable husbands or they are persons suffering from some infirmity or disfigurement, beggars, concubines, religious devotees and mendicants.

Nor is this custom rapidly breaking up. In the twenty years before 1921 the proportion of married females in the age group 10–15 years declined less than 10 per cent. In the forty years before—which carries us back to the first Indian census—the decline was 23 per cent. So the practice may easily outlast our century. Observes the Gen-

⁴ “The Population Problem in India,” 1916, pp. 4–6.

eral Census Report for 1921: “. . . While the educated classes are inclined towards the postponement of marriage both for men and girls, there is a strong countervailing influence in the tendency to the adoption of what is held to be an orthodox Hindu custom by those castes which are trying to better their status and hope, by exaggerated orthodoxy, to enhance their social respectability.”⁵

UNCONTROLLED BREEDING. Outside the very thin layer of Western-educated, there is no idea of deliberately limiting the family. Dr. P. D. Shastri observes: “Indian women have been treated as slaves for centuries past. The great bulk of the people are still ignorant and superstitious, and they have been taught by their orthodox tradition to look upon woman as an instrument of man’s pleasure, as a machine for the propagation of the human species and the gratification of man’s sex impulse.”

“Hindu marriage is not a contract, but a religious institution with its religious duties. A good deal of superstition has accumulated round the ancient texts, so that it has been almost universally believed that the primary object of marriage is procreation, preferably of a male issue.⁶ In this light the use of any contraceptive would obviously be looked upon as ‘immoral’ and ‘unnatural’ and even ‘sinful.’ ”

Professor Gopalji testifies to the same effect: “Dense ignorance prevails, even among the educated classes, on sex-hygiene, eugenics, and Birth Control. Orthodox morality, spurious sentiment, false modesty, and even sham hypocrisy blind people to the most real issues of life.”

Mr. S. Mukerjee in charge of the 1921 census of the

⁵ Page 159.

⁶ “The Brahmanic system dooms a man to a particular region of pandemonium unless he leaves a son to perform the proper obsequies for his release.” Census of India, 1881, General Report, p. 59.

native state of Baroda makes the instructive comment: ⁷

There is little evidence of the actual use of any of the mechanical or chemical contraceptives that are well-known in Europe. The Parsis are an exception, and I am assured by Parsi doctors whom I have consulted that conscious birth-control for the restriction of legitimate families is well-known amongst them. Certain sections of Hindu or Musalman castes, who have come under European influence or have travelled extensively to South Africa or Europe, know of the uses of these "rubber-goods" and have even adopted them in their homes. . . . But their numbers are so few that their practices cannot be said to be in any way likely to affect the birth rate. A larger number go in for the restriction of marital intercourse to the so called "sterile week," i. e., to those periods between menstruation when conception is least likely. But the general attitude of the Hindu wife is usually one of horror at the idea of any human interference with what is regarded as a divine dispensation, so that the menfolk, even though they are cognisant of these practices, do not use them for legitimate purposes but reserve them for vice.

What under these conditions is the fertility of Indian marriages? Light is shed on this question by the data collected on more than half a million completed families in six provinces of India. The conclusions are:

(a) The usual number of children born is from five to seven.

(b) Between one third and two fifths of the children born die.

Breeding from immature females appears to produce fewer rather than more infants than were born to Western peoples before birth-control began to be practised; but in India the generations are much closer together so that the population tends to multiply very fast.

DYING OUT OF FEMALE INFANTICIDE. Formerly the

⁷ Census of India, 1921, Vol. XVII, "Baroda State," p. 217.

practice of female infanticide contributed to keep down the growth of numbers. The General Report of the Indian Census of 1911 observes: ⁸

This practice is of very old standing in the Northwest of India. After the British occupation it first came prominently to notice towards the end of the 18th Century amongst the hyper-gamous Rajput clans of Gujerat. . . . The practice was soon afterwards found to be extremely prevalent in the United Provinces, the Punjab and Rajputana amongst various sections of the population. . . .

The dying out of this custom, as shown by the great increase in the proportion of female children in these areas, has removed one restraint on the growth of numbers.

THE ACTUAL STATE OF THE INDIAN POPULATION. According to Wattal the results of the Indian system are:

(a) That in all old provinces the pressure of population on cultivation is fairly intense.

(b) That a development of the means of subsistence *in the circumstances of the country* can only mean a development of irrigation; but irrigation has no very bright future before it.

(c) That the agriculturist population is increasing at the expense of the industrial and trading population; and that the decline in the latter is attributable to the displacement of the hand-worker by the machine.

(d) That therefore the only remedy for poverty and other evil effects of the principle of population is moral restraint or abstinence from improvident marriages.

Aga Khan declares: ⁹ "The present condition of Indian agriculture and of the 219,000,000 human beings dependent thereon is the greatest and most depressing economic tragedy known."

⁸ Page 115.

⁹ "India in Transition," 1918, p. 201.

Even more gloomy is the picture by the Indian economist Professor K. T. Shah of the University of Bombay:

The Indian people are underfed. Either one in every three individuals must go hungry; or,—what is much more easy, insidious and injurious—every one must cut one out of every three meals necessary to him. This inevitably becomes the common practice, and the consequence is the progressive deterioration in physique and energy that renders additional production with a view to make up for the deficit increasingly more and more difficult. The vicious circle is complete. The Indian people are, relatively speaking, debilitated and inefficient because they have not enough food available. They cannot have enough food—they cannot produce sufficient for their requirements on the lowest standards—because they are lacking in strength and energy! ¹⁰

. . . the average Indian income is just enough either to feed 2 men in every three of the population (or give all of them 2 in place of every three meals they need) on condition that they all consent to go naked, live out of doors all the year round, have no amusement or recreation, and want nothing else but food, and that, the lowest, the coarsest, the least nutritious! ¹¹

. . . the available resources of the Indian people are not sufficient to give them two meals out of every three they need, let alone the question of satisfying other wants like those of clothing or house-room. There is thus ample evidence to conclude that India is overpopulated. No doubt, there is a high birth-rate—higher than the death rate, which explains in part the steady growth of the population in the successive censuses. But the further fact that every epidemic which makes itself manifest always claims a greater proportion of souls in this than in any other country is conclusive, in my judgment, of the fact that the vitality of the people is so steadily being reduced that they are unable to withstand the ravages of any sudden demand upon their constitution. Habitually underfed, they simply cannot, of

¹⁰ "Wealth and Taxable Capacity of India," 1924, p. 252.

¹¹ *Ibid*, p. 253.

their own inherent vitality, resist the approach of illness; and so the death rate also tends to be excessive. There is no further proof necessary to show that India is, from an economic standpoint, overpopulated. It is true, the people manage somehow to live. But they live a life which is a disgrace to any community calling itself civilised, since the less than brute existence they manage to maintain is purchased at the cost—impossible to measure in terms of money—of a steady, regular, progressive, unrestrained reduction in the national vitality, and national efficiency.¹²

A quarter of a century ago the bareness of life of the Indian masses was thus described by an observer: ¹³

Millions of men in India, especially on the richer soils and in the river deltas, live, marry, and rear apparently healthy children, upon an income which, even when the wife works, is rarely above two shillings a week, and frequently sinks to eighteen-pence. The Indian is enabled to do this not so much by the cheapness of food—for though it is cheap, a European who ate the same food would want five times the money merely to feed himself—as by a habit of living which makes him independent of the ordinary cares of mankind. He goes nearly without clothes, gives his children none, and dresses his wife in a long piece of the most wretched muslin. Neither he nor his wife pay tailor or milliner one shilling during their entire lives, nor do they ever purchase needles or thread, which, indeed, it is contrary to a semi-religious etiquette ever to use. The poorer peasant inhabits a hut containing a single covered room of the smallest size, with an earthen platform or two outside it; and as he constructs and repairs his own dwelling, he virtually pays no rent, except for the culturable land. . . . He eats absolutely no meat, nor any animal fat, nor any expensive grain like good wheat; but lives on millet or small rice, a little milk, with the butter from the milk, and the vegetables he grows. Even of these he eats more sparingly than the poorest Tuscan.

¹² "Wealth and Taxable Capacity of India," 1924, p. 340.

¹³ Meredith Townsend, "Asia and Europe," 1901, pp. 228-229.

Along with such pullulation and crowding goes naturally not only an average life-span less than half that of Western Europe but a low valuation of human life. Wattal cites ¹⁴ the fact that in his school days the Urdu text-book used in the third or fourth grade "asked in all gravity whom should we try to save: a starving cow or a starving human being if we chanced to meet them alone in the jungle and had the means to save only one of the two?"

WILL INDIA CUT HER BIRTHS? Indian intellectuals exult that "blind tradition is now losing its hold over the more educated classes who, infused with their sense of freedom and the scientific spirit of inquiry," have thrown off "the tyrannical sway of authoritative texts" and "begun to reflect for themselves on fundamental problems." But forget not that these emancipated are but a thin film—a quarter to a half of one per cent—floating over "soundless deeps through which the cry of the press and platform never rings." It is, after all, the ancient behavior patterns of the myriads which will shape the future of the Indian birth-rate. No wonder the census concludes: ¹⁵ "Unless, as is extremely unlikely, there is some revolutionary change in the outlook of the mass of the people towards marriage, it seems impossible that there will be any general downward movement of the birth-rate in India for many years to come."

HOW INDIA'S DEATHS ARE BEING CUT. India administered on Western lines benefits by the progress of medicine. Science lassoes her great man-eaters one by one. Thus vaccination saves 160,000 a year from death by smallpox. Rats are exterminated to stay the spread of the plague. You cannot go to shooting anti-plague serum into

¹⁴ "The Population Problem in India," 1916, p. 27.

¹⁵ General Report of 1921, p. 48.

a population so ignorant, superstitious, and suspicious; but free inoculation is offered and often accepted after long explanations and powwows. Holy places like Hardwar and Allahabad, where half a million pilgrims may throng, are carefully guarded against outbreaks of cholera; for the Health Service disinfects water sources, isolates the stricken, and regulates movement out of infected areas. "Baby weeks" popularize the proper care of infants. Every provincial health department has its publicity bureau using traveling exhibits, lantern-slides, motion-films, health talks, instruction in the schools, and illustrated pamphlets in all Indian languages. Crown of it all is the Calcutta School of Tropical Medicine, whose fifty researchers—two thirds of them Indian—track down such man-killers as kala-azar, hook-worm, leprosy, diabetes, beriberi, filariasis, cholera, sprue, and amœbic dysentery.

So India, while persisting in carelessly bringing forth life, is being helped toward a low Occidental death-rate. Says the census report:

Systematized attack is being made on mortality at every point, both officially and privately, by the improvement of sanitation, the extension of medical relief and the organized efforts toward infant and maternal welfare. Any substantial success in such measures would mean the widening of the difference between the birth-rate and the death-rate and a corresponding rise in the rate of increase of the population.

In other words the age-old equilibrium of the Orient—a slaughter-house mortality balancing a reckless procreation—is being upset by humane administrators of Western training who are able to narrow the exits of Indian life but not the entrances. Result: the production of popu-

lation surpluses which no feasible improvement of agriculture or growth of industries can support.¹⁶

THE CHINESE. China is a Sahara for statistics. After India one famishes in China from lack of trustworthy data. The Post-Office estimates a population of 436,100,000, but most experts deem this at least fifty millions too high. We know that the province of Kiangsu with 875 persons to the square mile is the most densely peopled political unit on the globe. As to age distribution, age at marriage, marriedness, births, deaths, infant mortality, there are no statistical data. We know, however, that all marry, that girls are married young but not so young as in India, that babies come fast but die soon, and that a few years ago the Chinese themselves estimated that a tenth of the girl babies are done away with.¹⁷ The birth-rate must be between 50 and 60 per thousand; the death-rate about the same if we average with the normal years the years of epidemic or famine.

Only male descendants can conduct the rites of ancestor worship; so a youth's first duty is to marry the bride his parents pick for him and beget a son. If the union is not blessed by a male child, a concubine is brought in and her boy baby counts as the son of the legitimate wife. Since but one infant out of four or five survives, there is small security in a single son. So one begets till there are several sons and, since daughters arrive as often as sons, there is soon a big family.

Chinese thought has never questioned this uncurbed procreation, but that it is a social blight is as plain as the squares on a chess-board. Just as Malthus predicted,

¹⁶ In order to encourage agricultural improvement, or out of tenderness for native religious prejudices, the Government of India does not officially admit that India is overpopulated. But talk with the experts!

¹⁷ See Ross's "The Changing Chinese," 1911, Chapters IV and VII.

deaths are balanced with births by means of pestilence and famine. The former is intermittent, but the latter functions all the time. We hear of huge famines resulting from flood or drought without realizing that every day in China thousands die from starvation. The Chinese contemplate the phenomenon with philosophic calm, for they are used to it and recognize it as nature's method of bringing mouths and food into balance. Large-scale famine relief originates with the foreigners whose Occidental experience has not prepared them for the grim penalties of overpopulation.

Very few of these foreigners perceive the outcome of their labors. Buying food to feed the starving saves their lives, but the inevitable rise in prices forces others below the survival line. "China," observes Mr. Henry K. Norton,¹⁸ "is like a huge raft crowded far beyond its capacity with shipwrecked human beings. Many are swimming about in the water, but for each one pulled aboard on one side someone else is pushed off on the other side. The raft will hold no more."

The chronic overproduction of Chinese lives will last a long time yet. To be sure, in the ports and capitals, there is in some circles an eager taking over of modern ideas. The New Thought movement is rapidly releasing women of the *élite* from their old gyves. No longer are they content to attend to domestic affairs only; they demand a hand in social and political matters as well. Breaking over the narrow confines of the family, they invade colleges and universities where formerly only men were allowed, and in defiance of tradition insist on mingling with members of the other sex in society.

It is becoming quite the vogue in China for men and their

¹⁸ "China and the Powers," 1927, p. 191.

wives to mingle in the same company. Naturally this means that educated women are at a premium in the matrimonial market. An educated woman knowing her value makes a few stipulations before she signs a contract for life. These stipulations invariably include a monogamous household, a certain equality in household expenditure, education to be provided for the daughters as well as for the sons. The evident joy in the lives of the young Chinese couples who are thus mated and living on this plan is having a profound influence upon the country as a whole. No factor is more potent towards temperate procreation than the improving status of Chinese women.¹⁹

Appealing as are these movements, we must not imagine that the modernizing of a scant thousandth of this people perceptibly alters its propagative tendency. A million couples averaging four babies instead of ten would not change by a decimal China's birth-rate. Yet no one will claim that a million Westernized couples exist, or even half a million. Not the attitude of the thin top dressing of Chinese intellectuals and professionals in the chief cities will shape the near future of China's population, but the attitude of a hundred million farmers and laborers. To these, birth-control has as yet no more reality than it has to the Papuans.

Vaster than all Europe China has but seven thousand miles of railway, no good highways, and only eight thousand motor vehicles. Here is a fourth of mankind of whom a bare three per cent can read and write. In the thirteen years of the Republic there have been forty-three ministries, including twenty-five ministers of justice! The country is being racked and ruined by the fighting of self-seeking war lords. The outlook is anything but hopeful for the timely diffusion of that family prudence which bids fair to save the day in the West. For a long time—cer-

¹⁹ J. E. Baker in "The Trans-Pacific" for June, 1923.

tainly for this century and much of the next—China will be a human ocean threatening to deluge the less crowded parts of the world, against which the advanced peoples will have to protect themselves by immigration barriers as the ancient Netherlanders saved themselves by dikes from being overwhelmed by the North Sea.

THE JAVANESE. Thanks to enlightened Dutch administration, the population of Java, which is of the size of the State of New York, has in a hundred years increased from five millions to thirty-seven millions. "Each acre of cultivated land, whether it be mountain or plain, must on an average support nearly two and one-half people. Labor is cheap, for the average man in the fields gets only eighteen or twenty American cents a day." ²⁰ "The people are numerous and their needs and desires are slight. . . . They rarely want anything more than the simple food, scanty dress and crude houses that they have always had." ²¹

Girls are married very early. "The flapper, the young girl in school, college, office or factory . . . seems scarcely to exist. The girl of twelve or thirteen seems suddenly to pass into the young matron. A girl of fifteen or sixteen with a baby strapped on her hip seems as old as our young women of twenty-five or thirty." ²² "The young matron with a baby in her arms seems suddenly to give place to the old, wrinkled, discouraged, gray-haired hag to whom life has lost all interest." "This absence of young girls with their verve and spirit and beauty, and the absence of older women to whom life is still worth while, although they are the mothers of grown children or even grandmothers, is the great tragedy of Java." ²³

²⁰ Ellsworth Huntington, "West of the Pacific," 1925, pp. 229-230.

²¹ *Ibid.* p. 231.

²² *Ibid.* p. 260.

²³ *Ibid.* p. 261.

Fast as the Javanese multiply, they have so far, thanks to commanding the aid of the best Western technique, expanded their production of food at an equal pace, so that life is not getting harder for them. But the Dutch have brought their death-rate down to 26, and they cannot go on generation after generation with their present wide margin of births above deaths. Something must change soon, but it is not likely to be their birth-rate. There is nothing to indicate that the women are gaining a higher status, that the standard of living is rising, that marriage is being deferred, or that propagation will be less thoughtless in the future than it has been in the past.

For the Javanese still are "Asiatic."

THE JAPANESE. The Japanese, in number but a thirteenth of the peoples we have been considering, are by no means so backward. Their family traditions, to be sure, are "Eastern." Their birth-rate (35 in 1925) is of the East, while their death-rate (23) is half Western. Coupling an Oriental fertility with a near-Occidental mortality gives Japan proper an annual growth of about 700,000 (in 1925, 875,000). Since Nippon is but a little larger than the State of Montana and five sixths of it is unfit for farming, there is small prospect that it can be coaxed to feed many more than the forty millions (out of a total population of sixty millions) it now does. The government's remedy is "more industrialization," relying on Japan's possession of cheap and abundant hydroelectric power, her geographical position near the supplies of raw materials, the vast potential market for manufactured goods which exists in the Far East, and the increasing buying power of Australia and the United States. But the countries Japan might import from are not increasing but each year decreasing their exportation of food and raw

materials in order to satisfy their home demand. So the Japanese seem to be confronted with the alternative of overflowing or else restricting the size of their families. In most countries they would care to migrate to they encounter immigration barriers; while to go to war with Russia, Great Britain, or the United States in order to smash the barrier would be taking desperate chances. Yet birth-control runs counter to Japanese traditions. Testifies Count Soyeshima: "Statesmen are afraid of it, and the politicians, playing upon the inherent prejudices of the people, would be certain to oppose it clamorously. All the forces of Buddhism are arrayed against it. All the weight of Japanese custom, based upon the family system, and Japanese tradition, resting upon loyalty to the Imperial family and the necessity of breeding sons as fighting men, would be against it."

Says Abe, "A considerable number of our statesmen entertain progressive ideas, yet it is a fact that a majority of them are ruled by the jingoistic spirit and are naturally antagonistic to birth control."

While it is permitted to advocate birth-control openly, the authorities will not suffer contraceptive methods to be explained in public. One self-devoted physician has opened a consulting-room and given counsel to more than a thousand mothers. It is not yet settled whether he will be allowed to go on. At present not one per cent of the Japanese are acquainted with birth-control methods. The leaders stand at the parting of the ways hesitating which road to take. Within a few years final choice will have to be made between the old remedy for crowding—national violence—and the new remedy—birth-control. The decision will be no less fateful than Japan's turning her face toward the West in 1867. It is, in fact, the saving and

prolonging of Japanese lives by Western science which has brought her again to the forks of the road.

To sum up: About three fifths of humanity share the "Asiatic" culture, which, speaking very broadly, implies: pessimistic religion, a fatalistic resignation toward the ills of life, woman's inferiority, masculine domination, patriarchal authority, traditional standards of living, early marriage, and large families. By dissuading the East from infanticide and teaching her how to curb disease, the West unwittingly ruptures the equilibrium between births and deaths and aggravates the population problem of the East. Since adaptive fertility will appear only very tardily in the great Asiatic hives, the supreme problem of the near future is the adjustment of the relations between the two segments of humanity of such divergent tendency.

CHAPTER XXV

FLOWING MYRIADS

IN the past, human inertia has lent stability to the relations of peoples and races. After the beginning of the agricultural stage most men lived and died within a few leagues of their birthplace. Bound by habit they endured their lot, be it never so hard, without dreaming that a kindlier fate might be awaiting them overseas. Rare was the man so imaginative and bold as to pull up stakes and wander beyond the horizon.

But this molluscan period is not likely to last much longer. Since the birth of men now living the conditions of long-distance mass movement have been utterly revolutionized. Not only has steam made travel safe and swift and cheap, but the long-distance carriage of migrants has become a well organized business managed by master minds and served by hordes of agents. The peasant living within sight of the rock of Prometheus or the cedars of Lebanon may buy a through ticket to a frontier point in the interior of Argentina or the Canadian Northwest. For the sake of the profit to be extracted from them, simple laborers are gathered, despatched, and cared for during their long journey to a destination on the other side of the globe, as if they were commercial wares.

THE IMPROVEMENT OF OCEAN TRAVEL. What the ancestors of our Pennsylvania Germans endured when, nearly two centuries ago, they migrated from the Upper

Rhine to Philadelphia may be gathered from the pages of one who made the journey and wrote a book about it.¹

This journey lasts from the beginning of May to the end of October, fully half a year, amid such hardships as no one is able to describe adequately with their misery. The cause is that the Rhine boats from Heilbronn to Holland have to pass by thirty-six custom-houses, at all of which the ships are examined, which is done when it suits the convenience of the custom-house officials. In the meantime the ships with the people are detained long, so that the passengers have to spend much money. The trip down the Rhine alone lasts therefore four, five, and even six weeks. . . .

Both in Rotterdam and in Amsterdam the people are packed densely, like herrings so to say, in the large sea-vessels. One person receives a place of scarcely two feet width and six feet length in the bedstead, while many a ship carries four to six thousand souls; not to mention the innumerable implements, tools, provisions, water-barrels and other things which likewise occupy much space.

On account of contrary winds it takes the ships sometimes two, three, and four weeks to make the trip from Holland to Cowes in England. But when the wind is good, they get there in eight days or even sooner. . . . Many suffer want already on the water between Holland and Old England.

When the ships have for the last time weighed their anchors at Cowes, the real misery begins with the long voyage. For from there the ships, unless they have good wind, must often sail eight, nine, ten, to twelve weeks before they reach Philadelphia. Even with the best wind the voyage lasts seven weeks.

During the voyage there is on board these ships terrible misery, stench, fumes, horror, vomiting, many kinds of sea-sickness, fever, dysentery, headache, heat, constipation, boils, scurvy, cancer, mouth-rot, and the like, all of which comes from old and

¹ Gottleib Mittelberger, "Journey to Pennsylvania in 1750 and Return to Germany in 1754," pp. 18-25.

sharply salted food and meat also from very bad and foul water, so that many die miserably.

Add to this want of provisions, hunger, thirst, frost, heat, dampness, anxiety, want, afflictions and lamentations, together with other trouble as e. g., the lice abound so frightfully, especially on sick people, that they can be scraped off the body. The misery reaches the climax when a gale rages for two or three nights and days, so that everyone believes that the ship will go to the bottom. . . . In such a visitation the people cry and pray most piteously.

When in such a gale . . . the ship is constantly tossed from side to side by the storm and waves, so that no one can either walk, or sit, or lie, and the closely packed people in the berths are thereby tumbled over one other, both the sick and the well—it is readily understood that many of these people, none of whom had been prepared for hardships, suffer so terribly from them that they do not survive it. . . . Many hundred people necessarily die and perish in such misery, and must be cast into the sea, which drives their relatives or those who persuaded them to undertake the journey to such despair that it is almost impossible to pacify and console them. In a word, the sighing and crying and lamenting on board the ship continues night and day, so as to cause the hearts even of the most hardened to bleed when they hear it. . . .

Gruesome, indeed, was the loss of life on these slow packed boats. The ship on which William Penn crossed to found his colony lost a third of its passengers by small-pox. In 1639 the wife of the governor of Virginia writes that the ship on which she had come out had been “so pestered with people and goods . . . so full of infection that after a while they saw little but throwing people overboard.” One vessel lost 130 out of 150 souls. One sixth of the three thousand Germans sent over in 1710 perished in a voyage that lasted from January to June. A ship that left Rotterdam with 150 Palatines landed with fewer than

fifty after a voyage of twenty-four weeks. In 1738 "malignant fever and flux" left only 105 out of 400 Palatines. In 1775 a brig reached New York, having lost a hundred Highlanders in passage. It was estimated that in the years 1750 and 1755 two thousand corpses were thrown overboard from the ships plying out of Rotterdam.

Contrast now the latter-day transatlantic steerage as described by the U. S. Immigration Commission in 1911:

Privacy is secured by inclosed berths or staterooms . . . the better class are built like cabin berths. . . . Staterooms contain from two to eight berths. There are hooks for clothes, a seat, a mirror, and sometimes even a stationary washstand and individual towels are furnished. Openings below and above the partition walls permit circulation of air. . . . In some instances there is an electric bell within easy reach of both upper and lower berths which summons a steward or stewardess in case of need.

In the toilets and washrooms . . . floors are at all times clean and dry. Objectionable odors are destroyed by disinfectants. . . . Regular dining rooms appropriately equipped are included in the ship's construction. Between meals these are used as general recreation rooms. . . . The tables are covered for meals, and the heavy white porcelain dishes and good cutlery are placed, cleared away and washed by the stewards. The food is also served by the stewards. . . . The food on the whole is abundant and when properly prepared wholesome. . . . Little children receive all necessary milk. Beef tea and gruel are sometimes served to those who, for the time being, cannot partake of the usual food.

Hospitals were found in accordance with the legal requirements. On the steamers examined there was little occasion for their use. The steerage accommodations were conducive to health, and those who were seasick received all necessary attention in their berths. . . . The replacement of sails by steam, with the consequent shortening of the ocean voyage, has practically eliminated the former abnormally high death rate at sea. Many

of the evils of ocean travel still exist, but they are not long enough continued to produce death.

Then there is "the new safety on the sea," due to steam, wireless, submarine fog-bells, water-tight compartments, the twin screw, the removal of derelicts, separate ocean lanes for ships going in opposite directions, and legislative provision for safety appliances. The cumulative effect of these on the confidence of the public has been tremendous.

THE DIFFUSION OF THE POWER TO READ. For at least half the world the ability to read is being very rapidly diffused among those classes which feel population pressure and would naturally furnish the most immigrants. In 1840 about a fifth of the adults of the British, Scandinavian, and Germanic peoples could not read; now the illiteracy among them is negligible. Of the Italians to-day perhaps a third cannot read; in 1840, five sixths. As for Eastern and Southeastern Europe, as well as Western Asia, it is only within the memory of living men that any popular instruction has been provided. At the present rate of advance, however, we need look only a few decades ahead to see the ability to read general even in over-peopled Asia.

With literacy comes newspaper reading; and the newspaper, with its tales of what is happening far away, loosens local adhesions and makes men think of migrating. Then with literacy comes the power of those who have migrated to communicate with their friends left behind. Chief among "the contributory causes of emigration" the United States Immigration Commission² lists

the advice and assistance of relatives or friends who have previously emigrated. Through the medium of letters of those already

² Report, Vol. IV, pp. 56-57.

in the United States and the visits of former emigrants, the emigrating classes of Europe are kept constantly if not always reliably informed as to labor conditions here, and these agencies are by far the most potent promoters of the present movement of population.

It was frequently stated to members of the Commission that letters from persons who had emigrated to America were passed from hand to hand until most of the emigrant's friends and neighbors were acquainted with the contents. In periods of industrial activity, as a rule, the letters so circulated contain optimistic references to wages and opportunities for employment in the United States, and when comparison in this regard is made with conditions at home it is inevitable that whole communities should be inoculated with a desire to emigrate. . . .

We read of "the effect produced in peasant villages by the receipt of letters from America containing remittances of perhaps \$60 to \$100. . . . The cottage of the recipient becomes at once the place to which the entire male population proceeds, and the letters are read and re-read until the contents can be repeated word for word. When instances of this kind have been multiplied by thousands, it is not difficult to understand what impels poor people to leave their homes." "Letters, current gossip, newspaper stories, and the return of successful emigrants are the influences which bring individuals to the point of believing that the oppressive economic conditions under which they live can be escaped."

Literacy, too, makes the masses accessible to printed propaganda setting forth alluring contrasts between the bright future awaiting one in the United States and the harsh conditions surrounding him in Europe and detailing everything the emigrant needs to know from the time he prepares to leave the European home until his arrival at his distant destination.

THE INFLUENCE OF RETURNED IMMIGRANTS. Now that much overseas movement has become a simple matter of ocean ferriage, an increasing proportion of migrants go abroad to sell their labor for a few years in a favorable market and then return to their homeland to buy a property and settle down. In the later phase of migration to the United States the return flow rose to be a quarter or even a third of all who came. The Immigration Commission declares: ³

Emigrants who have returned for a visit to their native land are also great promoters of emigration. This is particularly true of southern and eastern European emigrants, who, as a class, make more or less frequent visits to their old homes. . . . The returning emigrant, as a rule, is one who has succeeded, and . . . is inclined to exaggerate, rather than minimize his achievements in the United States.

The Commission was informed that one-third of the emigrants from Syria return for a time to their native country and later go back to the United States; but in the meantime many of them build houses much superior to those of their neighbors and by such evidence of prosperity add to the desire for emigration among their countrymen. A man who left a little village in Transylvania in 1904 with the proceeds of the sale of two head of cattle came back two years later with \$500 and was the source of a general fever of emigration among his acquaintances, which has increased ever since. It is not to be wondered at that young men of spirit and ambition should want to emulate successful friends, and one can easily feel the truth of a statement made by a large land proprietor to the Royal Italian Agricultural Commission . . . : "Emigration is spontaneous. It becomes like a contagious disease. Even the children speak of going to America."

³ Report, Vol. IV, pp. 58, 230-234.

A traveling agent of the United States Bureau of Immigration reported in 1906:

It is not difficult to pick from among the lower classes of Italy individuals who have resided in the United States, their look of prosperity being a reliable guide in this respect.

The same writer observed an illustration of this at the port of Naples, where one ship was disembarking a load of returned emigrants while another was embarking emigrants for the United States, and commented upon it as follows: "To one side could be seen the steerage passengers, all in neat attire, unfastening their well-filled trunks, preparatory to the customs inspection, while to the other side were the thousand or more awaiting embarkation, but presenting a severe contrast to their brethren returning from the States". . .

THE AID OF THE PIONEER. The Immigration Commission found that 97 per cent of the immigrants from the less advanced peoples of Europe were coming to join relatives or friends. Not only was the immigrant thus welcomed into a circle of kinsmen or friends who helped him get a job and learn American ways, but it appeared that about a fourth come over on steamship tickets paid for in this country.

It is difficult and in many cases impossible for the southern and eastern European to save a sufficient amount of money to purchase a steerage ticket to the United States. No matter how strong the desire to emigrate may be, its accomplishment on the part of the ordinary laborer dependent upon his own resources can be realized only after a long struggle. To immigrants in the United States, however, the price of steerage transportation to or from Europe is relatively a small matter, and by giving or advancing the necessary money they make possible the emigration of many.

COMMERCIAL STIMULATION. Once millions of annual profits hinge on the full steerage, the most unscrupulous efforts are put forth to stir people to migrate. The Commission states: ⁴

. . . The propaganda conducted by steamship ticket agents is undoubtedly the most important immediate cause of immigration from Europe to the United States. This propaganda flourishes in every emigrant-furnishing country of Europe, notwithstanding the fact that the promotion of emigration is forbidden by the laws of many such countries as well as by the United States immigration law. . . .

Selling steerage tickets to America is the sole or chief occupation of large numbers of persons in southern and eastern Europe, and from the observations of the Commission it is clear that these local agents as a rule solicit business by every possible means and consequently encourage emigration.

One authority stated to the Commission that two of the leading steamship lines had five or six thousand ticket agents in Galicia alone, and that there was "a great hunt for emigrants" there. The total number of such agents is undoubtedly very large, for the steerage business is vastly important to all the lines operating passenger ships and all compete for a share of it. . . . The agreement among the steamship companies . . . does not affect the vigorous and wide-spread hunt for steerage passengers which is carried on throughout the chief emigrant-furnishing countries.

Not long ago in the villages of Southwestern Asia passenger tickets to remote American points were hawked about as newspapers are cried on our streets. The seller would not only incite the peasant to migrate, but would take a mortgage on his home for the passage-money or accept the bond of some relative that the migrant would within a year remit the sum advanced. Parties of "green-

⁴ Report, Vol. I, pp. 189-191.

horns," through-billed from their native village by a professional money-lender, were met at the right points by his confederates, coached on the answers to make to the immigration authorities, and delivered finally to some "boarding boss" in this country who was recruiting labor on commission for a construction gang.

MIGRANCY CERTAIN TO INCREASE. All the influences which swelled the pre-war tide to an astounding volume stand ready to produce Gulf Streams of emigrants in the future. The era of facile migration is here. No longer is population rooted like a tree in its natal soil; more and more it deliquesces and moves in ever-broadening streams toward any region which holds out the prospect of a much better living. This readiness of humble folk to up and away is recent, but it is no transient thing. So far as we can see the means and desire of removing from one's native land to another will grow. Formerly the hard-pressed human layers showed no more tendency to flow than the strata under a mountain. Difference among countries in respect to population pressure did not give rise to currents of migrants.

Now, more and more, the world over, the masses are becoming viscous, even fluid. The old blockage to the flow from high-pressure areas to low-pressure areas is disappearing; and, unless barriers are deliberately set up to hinder it, there will come about an equalization of the economic lot of the masses throughout the world. On the whole it will be equalization *downward* rather than *upward*.

CHAPTER XXVI

EFFECTS OF IMMIGRATION UPON THE DISTRIBUTION OF NATIONAL WEALTH AND WELFARE

OVERSEAS migration is more and more a flow of labor. Our capitalists may invest their capital in Mexico, Argentina, or Kenya, but they are slow to remove themselves thither. Few prospering merchants emigrate. Fear of meeting with difficulties in obtaining a license to practise deters most professional men from removing to a less crowded country with a language different from their own. Members of the leisure class, of course, prefer to stay on in their homeland, where their social position is assured. Broadly speaking, then, it is *the laboring class* in the immigrant-receiving country which must bear the brunt of the competition from the new-comers.

Imagine that during a period when the labor supply of such a receiving country had been increased by a definite proportion, say 10 per cent, by the influx of laborers seeking employment, the volume of capital had been augmented in equal degree from abroad, while immigration had added 10 per cent also to the number of merchants, bankers, professional men, manufacturers, mine operators, managers, technical men, and qualified candidates for the public service. In such case there might be no serious alteration of the distribution of wealth and welfare among the social classes. Society would continue in balance.

Mere statement of the supposition reveals how untrue it is to life. Save when a wave of emigration has been set up by a natural calamity, a social upheaval, or the policy of discriminating against a racial, religious, or political minority, the flow to the settled but less crowded countries is composed almost entirely of hand workers seeking jobs. In a free country, of course, some of them will eventually rise out of the ranks of labor and become farmers, shopkeepers, employees in public service. But most of them will remain working-men, thereby depressing the pay of labor in comparison with the rewards of farming, merchandising, business enterprise, finance, politics, and professional practice. Immigrants, in a word, hurt economically the class with whom chiefly they compete; while they add to the prosperity of those who are in a position to profit by the cheapening of labor in comparison with other means of acquiring an income.

As a general thing nowadays, a heavy immigration alters the distribution of the national dividend to the hurt of wage-earners, and to the advantage of those who live from interest, dividends, profits, rentals, commissions, fees, and salaries. When the labor market is relatively overstocked, the rewards of personal exertion are lessened in comparison with the rewards of the capitalist, the landowner, the financier, the speculator. Inequalities of class incomes are accentuated; disparities among the social classes in respect to comfort, style of living, and economic independence are exaggerated; the feeling between classes changes for the worse. Class consciousness and class antagonism grow, and there is a fever of social unrest. Acting in conjunction with other disturbing factors, a heavy immigration might bring upon society bitter industrial strife, civil disorders, even attempts at revolution. In

view of the grave consequences which may develop from a too ready admission of alien job-seekers, a nation should not be accused of sheer hardness of heart if it takes steps to cut down foreign immigration. Restriction of inflow may be a justified measure of self-protection, even of self-preservation.

It is childish to see in the rising tide of restrictionist sentiment merely a falling away from the noble ideals of nineteenth-century humanitarianism, a reversion to the old code of national selfishness. Indeed, the matter is not so simple as that. The real causes of the turn in the tide seem to be:

1. *Change in the motives of migration.* Compared with the earlier overseas flow modern migration owes less to religious or racial persecution and more to the simple motive of desiring to better one's economic condition. The crowd at the nation's gates is therefore not only less appealing but also less select.

2. *Wanderers overseas are job-seekers rather than settlers.* Once a new country has been settled, immigrants flood the labor market and compete for jobs with those already there. By displacement, by depressing wages or the conditions of employment, they produce economic disturbance, which was not the case in an earlier day when they found their way to the open frontier and settled upon virgin land.

3. *Attention of governments to the demand of "labor."* To-day the wishes of "labor" count for much more in the politics of the underpeopled nations than they did a generation ago. This shifting of political power away from the proprietary and commercial classes in the direction of the working class is inevitably reflected in the attitude of government respecting immigration. Mine-owner domina-

tion in the Transvaal brought Chinese coolies on to the Rand to provide cheap labor for the mines. The Liberal triumph of 1905 caused them all to be sent home. The striking reversal of the policy of the colony of Natal in South Africa with respect to the importation of Asiatic labor undoubtedly reflected a shifting of political power away from the planters in the direction of labor. The endeavor of the Labor party in South Africa to stop the importation of seventy thousand native workers from Portuguese East Africa to work in the mines of the Rand is another illustration of labor-capital conflict over immigration policy.

4. *Sociology is heard from.* In the light of the results of the scientific study of society as it has been pursued for a generation, the assumptions that underlay the old humanitarianism are seen to be extremely flimsy. As we gain deeper insight into the life of society the disastrous effects of a heavy immigration upon the social structure and ideals of the receiving nation are better understood. Thereupon misgiving and dread succeed the former complacency regarding the mass influx of aliens.

CHAPTER XXVII

DISPLACEMENT OF NATIVE STOCK BY IMMIGRANT STOCK

A standard of living comprises those comforts, decencies, even luxuries, which a class or a people deem so essential to their happiness, self-respect, or social standing that they will curb their increase rather than forego them. It includes standards as to the treatment of one's wife, the care and education of one's children, one's obligations to church, community, or state. As soon as means of controlling the size of the family are known, then of two classes, or peoples, or races, competing within the same area, *the one which has the lower standard of living tends to displace the one which has the higher standard.*

The reason is that the former curbs its fertility less than does the latter. It has been found in Europe that, where nationalities of unequal cultures compete in the same field on equal terms, the one with the inferior culture expands at the expense of the other by the simple process of outbreeding it. In Posen the frontier between Prussians and Poles moved steadily westward because the Poles had a yearly natural increase of 17 per thousand; the Germans, of only 13. As Bismarck said, "the Poles multiply like rabbits, the Germans like hares." In Hungary the Rumanians, with lower standards of living and of care of wife and child, continually gained ground from the Magyars because their rates of natural increase were as 15 to 11. In the same way the Ruthenians displaced the Poles

in Galicia and the Italians in Austria displaced the Germans.

According to Gresham's classic law, "Bad money drives out good money," the reason being that the government has bestowed upon it a value above its real worth. On the same principle the less civilized element drives out—i. e., outbreeds—the more civilized when it has the benefit of the superior organization, technique, and sanitation of the latter, i. e., is loaned an efficiency which its lower civilization is incapable of giving it. This being the case, the superior element should either hold the inferior at a distance so that it shall not have its own higher efficiency turned against it, or else, as quickly as possible, should raise the standard of living of the inferior and acquaint them with the means of birth-control.

The tide of immigrants into a settled country is composed of the more adventurous individuals of the poorer classes and of members of the larger and less provident families. They enter the labor market and compete for jobs with those already there. Since their expectations are modest and they place no reserve price on their labor, they are surer of employment than the native laborers, whose standard of living calls for a higher wage and who will not work for a pittance. What such a competition with low-standard immigrants may mean to high-standard native workers is shown by the fact that from 1889 to 1916, a period of wonderful advance, the workers in American manufacturing industries made no gain in real wages. No other important section of society failed to gain ground. They alone had no share in prosperity.

When the income of high-standard native workers is determined by the competition of low-standard immigrants, their higher standards of cleanliness, decency, or

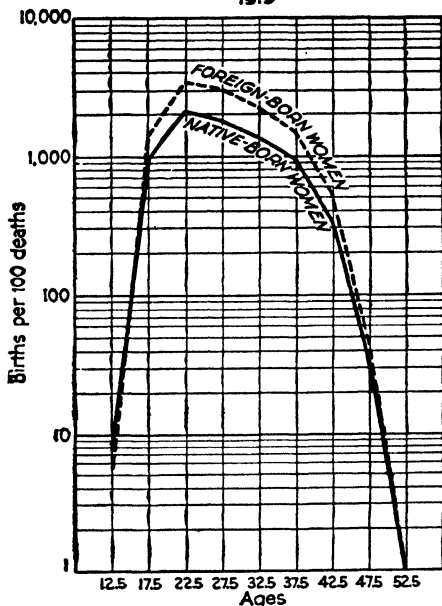
schooling more or less sterilize them. A low wage obliges them to cut somewhere, and, if they are unwilling "to live in a pig-pen and bring up their children like pigs," they will save their standards by cutting the family. The immigrant will marry before the native feels able to marry. He will rear five children on a wage which the native thinks justifies the rearing of but two. He will kill his wife with much child-bearing, while the native, out of consideration for his wife, restricts his family. Because he will have them clean, neatly dressed, and in school, children are burdens to the native. Because he lets them "run wild" and puts them to work early, children are assets to the immigrant. Yankee Jim does not rear as many youngsters as Tonio from the Abruzzi because he will not huddle his family into one room, feed them macaroni off a bare board, work his wife barefoot in the field, and keep his children weeding onions instead of in school.

Even moral standards may be a handicap. For example, once the women raisin packers at Fresno, California, were American born. But eventually they quit because of the low tone that came to prevail in the working force by reason of the coming in of foreign women with lax notions of propriety. The coarseness of speech and behavior among the packers gave raisin packing a bad name, so that the American girls quit and took the next best job—a poorer one.

A brutal attitude toward his woman helps the immigrant outbreed the native. In Slavic rural settlements in some parts of the United States the typical wife dies in childbed, and her stolid husband promptly takes another wife to wear out in the same fashion. Ten children is the average, and of course their wife-considering American

neighbors have no such swarms. So, farm by farm, township by township, the displacement of the high-standard folk goes on—a conquest made not by armed men but by poor abused women. Spending their women brutally, the Slavs advance; pitying their women, the Americans retreat.

FIG. 29- DIFFERENCES IN SPECIFIC VITAL INDICES FOR NATIVE-BORN AND FOREIGN-BORN WOMEN
1919



Reproduced from "Studies in Human Biology" by Raymond Pearl, thru the courtesy of the publishers, The Williams & Wilkins Company, Baltimore, Md.

IMMIGRANT STOCK DISPLACES NATIVE STOCK BY SHEER FERTILITY. Overwhelming is the evidence that in the northern section of the United States foreign stock has been supplanting native stock not by greater efficiency but

by living low and breeding irresponsibly. In 1890 in the cities a thousand foreign-born women could show 565 children under five years of age to 309 children shown by a thousand native women. By 1900 the proportion was 612 to 296.

Easton found that in New York State in 1916 the births per thousand *native* married women were to births per thousand *foreign-born* married women as 137 to 253. Kuczynski found that in Massachusettes in 1895 the births for the above groups of women were as 142 to 251.

The U. S. Coal Commission in 1922 secured data from an eighth of a million coal miners of whom more than half were foreign-born. Of the foreign-born miners 47.6 per cent had more than three children; of the native miners, 27.1 per cent. Of the latter 58 per cent had fewer than three children, whereas only 36 per cent of the foreign-born were in this group.

Professor H. H. Laughlin computed that for the decade 1910-20 the foreign-born white population was 1.6 times as prolific as the native white population.

Dr. Pearl computed that in 1918 the vital index of the native whites was 118.8, while that of the foreign-born was 151.8.

Analysis of the names appearing in the census schedules of 1790 and 1900 for Hartford County, Connecticut, showed a decline in the British stock from 99 per cent of all to 65 per cent.

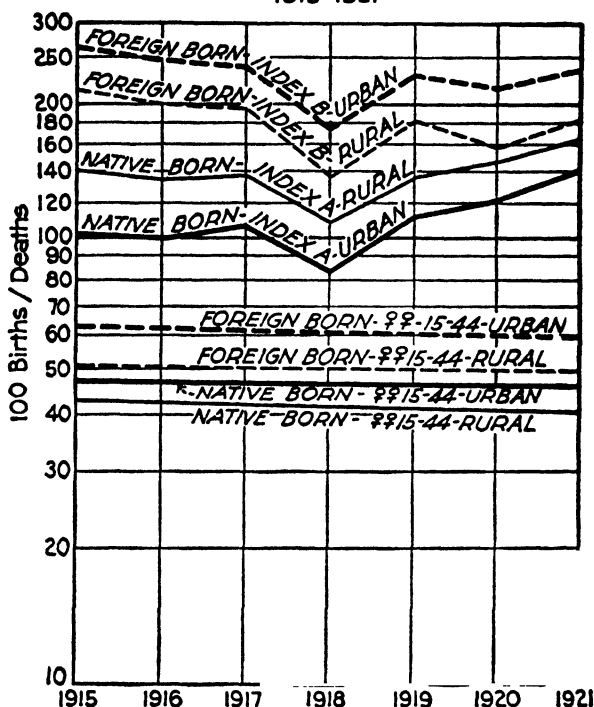
Between 1900 and 1920, outside our nine Southern States, which have been little affected by foreign immigration, the proportion of representatives of the old American stock in the population declined from 36 per cent to 32 per cent, while the proportion of foreign stock rose from 25 per cent to 32. Although many sons and daughters of immigrants cut their families like the natives, the arrival of

wave after wave of prolific foreign-born would in another hundred years have reduced the old breed to a trifling element in the population—which in the eyes of the eugenist would be a crime.

**FIG. 30 - THE COURSE OF VITAL INDICES
FOR NATIVE BORN AND FOREIGN BORN**

In the Original Birth Registration States

1915-1921



*Reproduced from "Studies in Human Biology" By
Raymond Pearl, thru the courtesy of the Publishers,
The Williams & Wilkins Company, Baltimore, Md.*

LOW-STANDARD IMMIGRANTS ARE PARASITES ON THE HIGHER CULTURE OF THE NATIVES. Mere fertility does not guarantee the biological triumph of the low-culture ele-

ment. In their homeland they would have lost so many of their children by preventable diseases, and nourished their families so ill from the scanty rewards of their crude industry, that their survival rate would not have surpassed that of the high-standard people. But, admitted to the midst of the latter, they have the benefit of their machinery and mass production, of their transportation system, their law and government, their pure city water, closed sewers, clinics, free dispensaries, medical examination of school-children. So the lower supplant the higher, not from inherent superiority, but simply because they have been admitted to ride with them in their chariot.

Thus for the U. S. Birth Registration Area the average number of children ever born to the *native* white mothers who gave birth to children in 1919 was 3.2; to the *foreign-born* mothers, 4. The *surviving* children were in number 2.8 and 3.4 respectively. The foreign-born mothers had lost 15 per cent of their children, the native mothers 12.5 per cent. Had the foreign-born mothers raised their children in Galicia, Basilicata, or Podolia, instead of under the favorable conditions created by Americans, their higher prolificacy might have been quite neutralized. So the low-standard immigrants supplant the natives partly because of the assistance they receive from the superior culture they have come into *and on which they are parasites*. The superior *provide the knife that cuts their throats*.

WHAT THE "OPEN DOOR" IMPLIES. It appears, then, that, when the crowded peoples urge the advanced peoples to open wide their gates, they are asking for more than simple hospitality. Virtually they are requesting the advanced peoples to take the path to eventual extinction, to pass quietly into oblivion and let the descendants of strangers occupy their place. Really, it is asking much!

America gave the open door policy ample trial, and with what result? New England was once peopled by "Yankee" stock and therewith achieved the highest plane of civilization ever touched in the New World. In 1920, however, but 38 per cent of the population were of the Yankee stock. The great modern conquest of New England began about 1879.¹ The inrush of immigrants was like a military conquest, but "a military advance . . . meets with resistance. These newcomers were helped, not hindered in their efforts to reach their objectives. Municipalities and mill owners wanted their labor and promptly met every difficulty that threatened discouragement." It was the Yankee capitalists who "saw fit to unduly stimulate their good fortune by bringing foreign labor, or permitting foreign labor to be brought, into the country without providing suitable safeguard." The immigrant was thought of as a cheap laborer, not as a progenitor. As always, yielding to the temptation to make money out of cheap immigrant labor wrought biological disaster. The fine Yankee stock withered as withered in the late Roman republic the sturdy yeoman of Latium before the endless importation of war captives reduced to slavery.

¹ See D. C. Brewer, "The Conquest of New England by the Immigrant," 1926.

CHAPTER XXVIII

LOSS OF LIKE-MINDEDNESS BY A MOTLEY IMMIGRATION

IF a vanguard people should play "the good neighbor" and admit all comers, it would soon find that it had unwittingly executed an about-face and was reverting toward a lower type of society instead of mounting toward a democratic future.

TESTS OF SOCIAL AND POLITICAL ADVANCEMENT. Most will agree that a society is to be envied in so far as it realizes the following:

a. Equality of status. None barred in advance from any legitimate activity, office, or honor.

b. The equal right of all elements to take part in government.

c. General and willing obedience to laws made by the people themselves or their chosen representatives.

d. No hereditary disability in respect to association or intermarriage.

e. All descriptions of citizens united by good understanding and fraternal feeling.

f. Personal and public conduct responsive to public opinion.

Those who have been bred in such a society are likely to exhibit in high degree such golden qualities as self-control, responsibility, sense of justice, good-will and public spirit.

But this free, democratic, and fraternal society cannot be realized unless in race and cultural background the

members are alike. If they are of different color races, a bar to intermarriage will inevitably appear, and social contact between the races will be restricted in order that this bar be not broken down. If they are one in race but far apart in culture, a true public opinion will be slow to form, and there will be no general agreement as to social institutions and policies. From want of like-mindedness community measures and undertakings of vital importance will command but a limited or grudging support.

THE VAIN ATTEMPT TO MIX OIL AND WATER. It is easy to see why this must happen. Imagine that into a homogeneous self-governing Canadian community there were incorporated a bloc of Oriental aliens equal to the Canadians in racial worth but quite unlike in traditions, training, and manner of thought. At once it would become impossible to realize in the community a true fraternal democracy. In case the Oriental group were permanently excluded from the electorate, it would be sure to develop a sense of grievance and to disregard just and necessary laws in the making of which it had no share. The exasperated Canadians would put more coercion behind these laws, with the result that recalcitrance and resentment would grow among the Orientals. Moreover, the Canadians, monopolizing political power, would be sorely tempted to load the dice in their own favor at the expense of the one element in the community without political means of redress.

If, on the other hand, the Asiatics were admitted to full political rights while remaining Oriental-minded, there would be little coöperation in thought and purpose between them and the rest of the community. Many of the policies which the Canadians warmly cherish—relating to marriage, public health, schools, recreation, and conservation of forests and game—the Asiatics would not understand nor value. Finding these policies realized “over their

heads" as it were, they would become disaffected from their sense of political impotence. In time, of course, some Canadian political faction would make a "deal" with the Oriental bloc, in which case their votes would obviously be the outcome not of conviction but of the rankest political log-rolling. After a few years of this the Canadians would regard their Oriental fellow-citizens as backward, non-coöperative, and even antisocial; a stumbling-block to progress and a menace to the unity and good-fellowship of the community.

This is by no means conjecture. In parts of the United States we find blocs of foreign-born demanding pledges from, or threatening political death to, candidates who are "suspected" of looking at public questions from a strictly American point of view. There is an Irish vote, a German vote, a Polish vote. In New England you have to reckon with a French-Canadian vote. In the cities there is the Italian vote or the Jewish vote to pull politics out of plumb. Foreign groups and governments egg on these aggressive alien blocs to "transfer Europe to America," i. e., to vex our collective life with the social and political feuds of the Continent.

In the absence of color contrasts all these uncivic groupings might in time disappear. But when the community includes elements of different color, time does not always solve the problem. In our South the fact that the community is composed of whites and blacks seems to cut it off forever from attaining the higher levels of sympathy and brotherhood as at times they are attained in intelligent one-race communities enjoying abundant opportunity for individual advancement.

If inheritance of attitudes from negro slavery makes our South untypical, look at the experience of Australia with Chinese settlers. No one pretends that the Chinese

settlers were of inferior race, nor were the relations between them and the whites vitiated by traditions inherited from slavery. Yet the backgrounds of the two elements were so immensely different that the Chinese congregated into communities of their own, living their own life uninfluenced by the ideas and customs of the people among whom they had settled. The two races showed not the least tendency to blend into a common citizenry. Gradually it became apparent that success in the greatest of collective human adventures, i. e., self-government, presupposes a people "possessing the same general cast of character, tone of thought, the same constitutional training and traditions."¹ In this high emprise all elements resident in the community must share. If any element be permanently excluded, social distinctions will arise which sap the very foundations of a democratic society.

Sir Henry Parkes of Australia was quite right when he declared in 1888: "We should not admit among us any class of persons whatever whom we are not prepared to advance to all our franchises, to all our privileges as citizens, and to all our social rights, including the right of marriage." As a speaker in the Legislative Assembly of New South Wales put it: "Our objection to Asiatics is not so much that they may belong to this or that race as that we regard them as unfit to take part with us in the duties of citizenship. We are not prepared to extend to them the privileges of citizenship, nor can we expect from them its obligations."

RESULTS OF LOSING LIKE-MINDEDNESS. When a people has arrived at such a stage of political like-mindedness that fundamentals are taken for granted, it is ready to tackle new questions as they come. But if it has admitted to its franchise myriads of aliens ignorant of the a-b-c

¹ Utterance of Sir Alfred Deakin in 1901.

of current political discussion, matters long looked upon as settled are reopened. The citizens are made to thresh over again old straw with not a rewarding kernel in it—the relation of church to state, of church to school, of state to parent, of law to the liquor trade. Meanwhile sheaves ready to yield the wheat of wisdom under the flails of discussion lie untouched. Pressing matters begging for immediate decision—public hygiene, the control of monopoly, conservation of natural resources, the protection of working-women—go to the foot of the docket while the new citizens divide over questions of a period long past.

Cheap travel and full steerages make mock of the ideal of nationality. Any prosperous country which leaves its doors ajar will presently find itself not the home of a nation, but a “polyglot boarding-house.” The thriving areas of the world will come to be populated by a miscellaneous party-colored mass, of divers languages and religions and of the most discordant moral and economic standards. Coolies at the breech-clout stage of attire, such as you find in the back districts of the Far East, will jostle the descendants of the Vikings and the Puritans. The enlightened will perforce brush shoulders with idolators, wearers of amulets, and believers in the evil eye. In the same labor market will compete those who sit at meat and those who squat on their heels about a bowl of food, those who insist on a carpet underfoot and those content with a dirt floor, those who honor their wives and those who make them chattels, those who school their children and those who work them.

Invariably when elements with such incompatible traditions commingle, castes form; so that the nation which persists in welcoming all inoffensive comers will presently find its people going asunder into closed groups. The fact

is, migration is now so easy that any flourishing people has to choose whether it will allow caste barriers to rise in it, or will itself rear a barrier against non-assimilable aliens.

So the people which leaves its doors open to the superfluous, come they from where they will and be their culture or lack of culture what it may, allows itself to become a hodgepodge, a Babel of tongues, a medley of races, a jumble of human odds and ends. Therewith it must give up the idea of realizing Lincoln's dream of a "government of the people, by the people, for the people." In order to be governed even passably well it must reconcile itself to oligarchy, to being governed by a minority, holding the mass outside the pale or hope of citizenship. To ask the young peoples thrilled by the noble ideal of democracy to turn their backs upon it and accept a lower type of polity belonging to the distant past is asking the surrender of their birthright.

CHAPTER XXIX

CLOSING GATES

ON the outward base of the statue of Liberty in New York Harbor are cut the words, "Send us your huddled masses yearning to be free." Near half a century has run out since it was decided to blazon this sentiment for all the world to see. During this time most of the great life destroyers have been laid by the heels. Among the enlightened peoples deaths have been cut by a third or even by a half, so that henceforth they dare not use more than half of their reproductive capacity. The ease of removing from place to place on the globe has doubled. The slumbering Orient has opened its eyes and is stretching itself. It is dawning upon us that it is as normal for people to migrate from countries of high population pressure to countries of low population pressure as it is for water to run downhill.

Hence, of late, the friends of the democratic ideal doubt whether societies in which ordinary human beings have become precious can go on absorbing the overflow from societies in which men have become cheap without losing the best thing they might contribute to the civilization of the future. Does it make for the prevalence of the higher breeds of men and for the spread of the higher type of civilization that ship-loads of folk of any race or culture may plow the sea in any direction, certain of finding always an open door?

It is plain that three of the most fateful developments

for the future of the human population of the globe date back about fifty years. The seventies of the last century saw the discovery of the nature of infectious diseases and the devising of a technique of coping with them; they beheld the rise of birth-control as a regulator of the natural increase of nations; and they witnessed the beginnings of the policy of restricting immigration.

AUSTRALIAN IMMIGRATION POLICY. The gold-rush of the fifties having brought near sixty thousand Chinamen into the two colonies of Victoria and New South Wales, there began to be fear lest the British character of the colonies be lost. Utterly alien in ideas and customs, the Chinese neither would nor could help to uphold and perfect free institutions and self-government in Australia. It was felt that these coolies would remain an "inferior" element in the community, while their presence would cheapen labor and discourage immigration from Britain. Restrictions in the form of an entrance tax and limitation of the number of Chinese to be brought in by any vessel were set up and maintained until the tide of Chinese ebbed. Then for ten years the doors stood open to all.

Late in the seventies new restrictive measures were placed on the statute books of the colonies. They were prompted by the growing number of Chinese immigrants, the introduction by this means of dread diseases such as smallpox and leprosy, experience by the working class of what it means to have to compete with Chinese labor, the manifest results of Chinese immigration upon our Pacific States and the measures taken in America to cope with it. So sentiment for restriction spread throughout Australia and began to draw the colonies together.

The year 1888 marked another stage in the development of the "White Australia" policy. Noticing how the Chinese threw their trade to their fellow-countrymen, the

mercantile class came to stand shoulder to shoulder with the working classes. More and more the Australians took the long look ahead and despised the planter's or wool king's itching to make high profits out of cheap Oriental labor. Nearly uniform restrictions were adopted by the colonies, so that the number of Chinese dwindled from 45,000 to 50,000 in 1888 to 32,000 in 1901.

But other Asiatics began to trickle in—East Indians and Singhalese, Syrians and Afghans. Japanese began to appear. The colonials could not but perceive that from low-wage countries there would be a constant leakage by every line of steamers to Australia, the working-man's paradise. Timely restriction seemed an "infinitely more humane policy than that of allowing tens of thousands of people of these coloured races to drift into this country, innocently and according to law, in order that from the contact between the white and coloured races here all sorts of evils, all manner of dissensions and perhaps a great deal of bloodshed might ultimately follow, embroiling this and perhaps the mother country with these great populous nations of the East."¹

Fear of a deluge from the human oceans in Asia was a dominant motive for the Australian colonies drawing together in 1900 into the Commonwealth of Australia; so the new government lost no time in passing an Immigration Restriction Act. In order not to raise up difficulties for the Imperial Government, no race nor people as such is excluded; but not one is admitted into Australia who, when asked to do so, fails to write out at dictation, and sign in the presence of an officer, a passage of fifty words in length of a European language. In practice the dicta-

¹ Mr. (afterward Sir) George Reid, quoted in Myra Willard's "History of the White Australia Policy," 1923, to which I am much indebted.

tion test is not imposed on persons of European race, but it bars effectively Asiatics of the coolie type.

That the key to Australia's policy is a social ideal and not dog-in-the-manger selfishness—as Orientals charge—is shown by the very earnest effort she has made, particularly since the war, to attract immigrants from Britain. The States are willing to spend millions in assisting settlers of the right sort to establish themselves upon virgin land.

Race pride does not seem to be the master motive of the White Australia policy. Rather it is such sociological considerations as I have urged in the last three chapters. Open gates would result in utter submergence by Asiatics. According to Dr. Thwing² India would be glad to send thirty millions of her three hundred millions there, and China would welcome an opportunity to find homes there for forty of her more than four hundred millions. In such an inundation the seven millions of whites in Australia and New Zealand would be lost completely.

NEW ZEALAND IMMIGRATION POLICY. New Zealand no less than Australia takes race unity as her lode-star. In her immigration law persons of other than European descent are designated as "race aliens" and not admitted unless they are able to read a passage of at least one hundred words in English. Chinese, moreover, are required to pay an entrance fee of a hundred pounds. A system of assisted immigration prevails in New Zealand for people from the British Isles. In the fifty years 1871–1920, 161,570 immigrants were assisted to settle in New Zealand.

SOUTH AFRICAN IMMIGRATION POLICY. At different times East Indians and Chinese have been brought into

² "Human Australasia," 1923, pp. 19–20.

certain South African colonies to provide cheap labor for planters or mine operators. However, so far as possible, these have been sent back or induced to go back to their own countries, for the young South African Union realizes that it has quite enough on its hands in adjusting the relations between 1,500,000 whites, 4,600,000 Bantus, and 800,000 Hottentots, Asiatics born in South Africa, and mixed breeds. No one is admitted who is unable to read and write some European language.

AMERICAN IMMIGRATION POLICY. The liberality of its admission, treatment, and naturalization of strangers has made America by far the most popular among the immigrant-receiving countries. In all history no country has attracted such vast numbers from so great a variety of peoples. For many Americans it became an article of faith that their country is divinely called to be an asylum for the downtrodden and oppressed of all the earth and that no considerations of national welfare or the national future should be allowed to stand in the way of the fulfilment of this mission.

Shallow humanitarians looked upon the natural resources of this well dowered land as a fund to be shared as quickly as possible among all comers until spent. The query, "What then?" never bothered them. But another school saw America, not as something to be used up quickly in relieving the immediate needs of incoming millions, but as a supreme opportunity to raise the life of the masses of men above the elemental struggle for existence. They saw a chance for the easier conditions of life in this country to crystallize in higher standards of living, self-cultivation, education, and recreation for the laboring common people; in new communal institutions and in ideals of democratic citizenship. These by being appropriated eventually for the masses of men everywhere might

help lift the lot of workaday mankind to a higher plane.

In 1868 in a treaty between the United States of America and the emperor of China the high contracting parties cordially recognized "the inherent and inalienable right of man to change his home and his allegiance." Within fourteen years the alarming evidence of the darkening of the outlook of the American working people on the Pacific coast by competition with 130,000 Chinese obliged our government to make a jest of this fine flourish of political idealism by excluding Chinese laborers. At that time, so great was the ignorance of social laws, all the enlightened and better-off people wished our doors to stand wide open. Exclusion could be brought about only by a violent working-class agitation appealing to race prejudice and circulating the most outrageous slanders against the Celestials. Once minds were freed from the fear of displacement, the good traits of the Chinese in the Far West came to be appreciated and the former hatred of them died down. Nevertheless, the Chinese were *not* assimilable, and the crude unscrupulous agitation saved the country from having a second great race problem on its hands.

In 1900, when Japanese were coming in at the rate of a thousand a month, there sprang up on the Pacific coast a demand for their exclusion. The movement was far more rational and less passionate than the anti-Chinese agitation of thirty years earlier; moreover, it found a quicker echo in Congress, for American intellectuals knew now the a-b-c of sociology. In 1908 the President arrived at a "gentlemen's agreement" with the government of Japan whereby the latter undertook to issue no passports to laborers wishing to migrate to the United States. Thus the flow was restricted without wounding the feelings of a justly proud people.

It was now no longer left to the American wage-earners to bear the brunt of the battle for restriction. Above their heads a great controversy raged. Thinking people caught the significance of comparative standards of living, comparative status of women, comparative birth-rates. Men learned how public opinion and the *mores* are generated. One recognized degrees of assimilability. The World War shocked easy-going optimists with the revelation that millions of immigrants had not been Americanized at all and that the country was coming to be (to use ex-President Roosevelt's phrase) "a huge polyglot boarding-house." So, quite without bigotry or passion, the literacy test for immigrants was adopted in 1917 and by means of designated parallels of latitude and meridians of longitude a large part of Asia and the islands of the South Seas were marked out as a "barred zone" from which ordinary immigration would not be received. The motive was not race prejudice but the desire to keep the American people from becoming too "unlike-minded."

In 1921 the prospect of a deluge of incomers from war-torn Europe prompted the enactment of the Three Per Cent Law, which limited those to be admitted from any one European nationality in any one year to a number (quota) equal to 3 per cent of the foreign-born of that nationality resident in the United States in 1910. In 1824 an elaborate act was passed which adopted the census of 1890 as the basis for a 2 per cent quota. The motive was to give larger quotas to the peoples of Northern and Northwestern Europe—from which chiefly the old Americans descended—and smaller quotas to the peoples of Southern and Southeastern Europe, with whom the native stock has less in common. At the same time the privileged position of the Japanese in comparison with other peoples of Asia was abolished.

Thus the United States has reversed its traditional policy after a century's experience with large immigration. Another "liberal" half-century and the American people would have become as motley as the dwellers in the Nile Valley to-day. The economic, cultural, and social elevation of the common man—which is likely to be America's best gift to humanity—would have been aborted. Nothing could be further from the truth than to suppose that immigration restriction is one more sin of American capitalism against the world. The fact is it is a democratic policy put through in the teeth of capitalists yearning for cheap foreign labor. Restriction is a triumph of the common people and far-sighted idealists against the alliance of employers and sentimentalists.

CANADIAN IMMIGRATION POLICY. Despite their liberal ideals the Canadians learned that open doors toward the Orient invited their displacement by immigrants of lower standards. To discourage the incoming of Chinese a head tax of \$50 was imposed in 1885 on all Chinese save merchants, diplomats, and students. In 1901 this was raised to \$100 and in 1904 to \$500. In spite of this several thousand came in each year. In 1923, when there were 45,000 Chinese in Canada, 40,000 of them concentrated in British Columbia, a Chinese exclusion bill was passed barring all save the exempted classes.

Since 1900 21,000 Japanese have come in, settling chiefly in British Columbia, where the population is now 7 per cent Japanese. However, Japan is the fourth largest purchaser of Canadian products; so it seemed best to handle the problem of Japanese immigration circumspectly. A gentlemen's agreement between Canada and Japan in 1908 limited the number of Japanese laborers who may come to Canada to 400 annually. Nevertheless, so many came in that in 1923 a new agreement limited the

number of domestics and agriculturists to 150 a year.

The immigration from India presents a problem peculiar to the British Empire. It would be anomalous for Canadians to exclude fellow-subjects, yet the East Indians present the same danger that other Orientals do. Canada gets around the difficulty by denying entrance to any stranger who does not come on a direct journey from his homeland. Since there are no passenger vessels plying between India and Canada, the Indians are excluded.

LATIN AMERICAN IMMIGRATION POLICY. In general lands and other natural opportunities are by no means so occupied in South America as they are in the United States. No doubt popular education, the raising of the technique of production, and the intelligent utilization of great quantities of capital would enable many more millions to gain their living in the valleys of the La Plata, the Amazon, and the Orinoco without intensifying the pressure of population. South America bids fair to be the blooming-place of the Latins as North America has been it for the Northern races of Europe. Argentina and Brazil are both great immigrant-receiving countries at a stage of economic development corresponding in many ways to that of the United States a generation or two ago. Not yet is there thought of restriction, but doubtless it will come. Venezuela admits no non-Europeans save Japanese. Brazil has given encouragement to companies formed to colonize Japanese in the country. Whether Japanese will be made welcome in Latin America in unlimited numbers is not yet settled, but it is certain that no other immigrants from Asia will be freely admitted.

CHAPTER XXX

THE COMING GREAT BARRIER

IF he sails far south in the waters of the Southern Hemisphere, the mariner descries at last a high forbidding wall extending east and west as far as the eye can see; it is the Great Antarctic Ice Barrier. So we begin to perceive lifting on the horizon the Great Barrier of the peoples of Europe, the Americas, and Australasia against those of Africa and Asia. Roughly speaking 35 per cent of mankind will be within this dike and 65 per cent outside of it. But even behind the Barrier, between the excluding peoples, there will be many restrictions intended to hinder the overflow from the naïvely prolific peoples—e. g., the Italians, the Slavs, the native races of Mexico and Central America—from “swamping” the peoples wedded to a high standard of living. Already it is evident that the overseas movement of human beings on such a colossal scale as that into the United States 1890–1914 (when 17½ millions entered) and especially in the years 1907 and 1914, in each of which the inflow was above a million and a quarter, is a thing of the past. In the coming age no nation will consent to receive strangers in such myriads.

Each of from thirty-five to forty sovereign states will have its laws restricting immigration from Asia and Africa, yet it is no misnomer to speak of them as constituting together a Great Barrier. For the time will come when the weaker states will not be able to maintain their policy in the face of pressure from certain Asiatic powers unless

they have the diplomatic and military support of the stronger among the excluding states; and this they cannot command unless their restrictions are such as their sister states approve. So such restrictions will approach a common pattern, and there will emerge a fairly uniform dike against pressure from the chief reservoirs of human beings.

No doubt the peoples concerned will make common cause in maintaining this dike. Just as the settlements behind the levee that confines the lower Mississippi cannot be indifferent to a weak spot, so the excluding peoples cannot allow a weak nation like Portugal or Uruguay to be intimidated by an Oriental power into admitting immigrants it wishes to exclude. Just as Australia resolutely refuses to permit Oriental immigration into tropical Queensland, by no means a white man's country, because she foresees that Orientals, overrunning Queensland, could not be prevented from percolating ultimately to every part of the continent, so South America could not afford to let Uruguay be overrun by Orientals nor would Europe allow the like to happen to Portugal. For it is far simpler to back the weak nation in excluding Asiatics than to keep those who have become domiciled in it from spreading into the neighboring countries.

THE GROUNDS OF EXCLUSION. Owing to the low state of culture of the bulk of the native peoples of Africa, and to the capacity of Africa, developed with outside resources, to accommodate several times its present population of 130 millions, the exclusion of the African races will meet with no challenge. The serious thing is the exclusion of Asiatics.

The barring of mass immigration from Asia cannot be justified on the ground that the Asiatics are racially inferior, for really we have no good reason for imputing to

the Asiatic races any form of inferiority. When I was going about in China seventeen years ago, to forty-three men who, as educators, missionaries, and diplomats, had had good opportunity to learn the "feel" of the Chinese mind, I put the question, "Do you find the intellectual capacity of the yellow race equal to that of the white race?" All but five answered, "Yes," and one sinologue of varied experience as missionary, university president, and legation adviser left me gasping with the statement, "Most of us who have spent twenty-five years or more out here come to feel that the yellow race is the normal human type, while the white race is a 'sport.' "

In India I met a high-placed British missionary who confessed that the ablest Indians surpass the ablest English, a significant admission to come from the lips of a member of the dominant race. Ere long mental measurement will show, no doubt, that the Asiatic races differ considerably among themselves in native ability; but rash, indeed, would it be to assume that in such tests the Asiatics generally will make a bad showing in comparison with the Europeans and their descendants outside of Europe.

Although the policy of exclusion was at first tainted by race prejudice, it is coming to be founded upon well established truths; viz.:

1. A homogeneous well knit society suffers grave injury from admitting great numbers of laborers of a lower standard of living and of a totally different cultural background. Not only is its internal balance upset and its political harmony disturbed, but it risks an eventual displacement of its stock by the descendants of the immigrants.

2. The laws of human increase as already developed in this book.

The wise men of the East never noticed the existence in our species of superfluous fecundity. Bent on continuing Family, Clan, and People, they failed to foresee how disastrously their teachings would work out. Until the Asiatic thinkers wake up to the population tendencies in the world to-day and perceive the folly of curbing famine and pestilence without at the same time delaying marriage or restricting births, they must expect that in sheer self-defense the Western peoples will meet the menace of a deluge of Asiatics by throwing up barriers. Incessantly the Asiatic peoples will produce a human surplus, which surplus we may expect to become larger in the degree that they appropriate the fruits of Western medical progress without at the same time changing their family customs. For the Westerners to allow this surplus to be dumped down in their midst with no assurance against the future production of such surpluses would be more saintly behavior than any people has ever shown. In effect they would be sacrificing their own prospects for the sake of an Asia which stolidly ignores the well settled laws of population growth. The Asiatics will be in a better position to challenge the rightfulness of exclusion if first they emancipate their females, cut their birth-rate, develop their latent resources, and raise the popular standard of living.

IS EXCLUSION DUE TO SHEER SELFISHNESS? Oriental spokesmen lay our refusal to relieve Asia's engorgement to a selfish and unbrotherly spirit. But is the case so simple? Two farmers live upon adjacent farms about equal in size and richness. A, the elder, has ten children; B, the younger, has four children and, having regard to the yield of his farm, intends to have no more. Now if the arrival of an eleventh child so adds to the burdens of A that he is unable to support his family, we might expect

B to offer to tide his neighbor over the crisis. But how if there is every likelihood that there will be a twelfth, or even a fifteenth, child in the family of his neighbor? Shall we call him hard of heart if he refuses to offer help until he can be certain that the burden he is to bear is not to be enlarged indefinitely?

Here in a nutshell is the issue between the Occidentals and the Orientals. The former decline to be encumbered with the excess population of the latter, not altogether from a selfish unwillingness to oblige, but because it is certain that, the religion and family system of the latter being what they are, there will be an endless succession of surpluses from which the Oriental people will desire to be relieved. Even if the Occidental people admitted Asiatics until itself reduced to misery and transformed into a Babel, the Oriental people would experience no lasting relief until it changed its family system. And if such change has to come, it might better come sooner than later. Wattal, the Indian sociologist, quotes with approval the words of Dr. Chalmers a century ago: "It is not by drawing off the redundancy of the population after it is formed that we can uphold a well-conditioned state of society, but by preventing the formation of that redundancy."

In a letter to me from Peking a Y man who has worked for many years among the Chinese writes, "If America were to take a hundred million Chinese during the next few years it would not greatly alleviate the situation here unless certain reforms were made, because their ranks would be rapidly filled up and the people would soon be in just as difficult economic circumstances as they are at the present time."

So long as the Asiatic masses breed without reflection or forethought, imagining virtue and profit in multitude

of offspring, the absorption of their overflow abroad would not make them prosperous, nor sensibly lighten their burden of toil, nor lift from their women the yoke of an exhausting maternity. Open doors in the Americas and Australasia would postpone but not avert the day when Asia must learn the lesson of voluntary parenthood as the West is doing it. It is no kindness to let her procrastinate and take her time about adjusting herself to the new situation into which life extension has brought the human race.

In no case may Asia long pursue her ancient ways. At best only for a generation or two could her surpluses find accommodation in other parts of the world. Then iron necessity would oblige the Asiatics to bring their fecundity under control. But if they will have to do this anyhow, why not now, before they have converted every progressive society outside Asia into a horde of mongrels or a hierarchy of castes, besides making the conditions of winning a livelihood well-nigh as hard as they now are in the man-stifled Orient? Why, for instance, should the rest of the occupied, well organized world be called upon to provide life opportunities—at whatever cost to themselves—for three quarters of a million Japanese each year when the remedy for the rising pressure in Japan is simple, painless, effective, and can be applied at any moment by the Japanese themselves?

UNUSED RESOURCES OF ASIA. Refusal to receive Asia's overflow is not equivalent to callously leaving the Asiatics shut up within an iron band. Near the mainland are large islands, such as Sumatra, Borneo, and Celebes, comprising an area nearly half the size of British India. Let them subdue nature and savagery here and create homes for themselves, as the Europeans have been doing in the New World for more than three centuries. Nor, from an enlightened point of view, is Asia herself anywhere near

saturation. Owing to lack of law and order, incompetency of government, or ignorance of how best to exploit natural wealth, great tracts have remained underpeopled.

Observes the General Report of the Census of India in 1901: ¹

Nearly two-thirds of the total population of India occupy only a quarter of the whole area while the remaining one-third is scattered over three-quarters of the area . . . there are no doubt certain localities . . . where the pressure on the soil is already felt, but it is believed that with more scientific farming the present produce of the soil might be greatly increased, in which case not only would the dearth of land now felt disappear, but room would be made for an even greater population. There are, moreover, many tracts where, even under present conditions, there is ample room for expansion. Burma should support a population at least half as dense as that of Bengal. The wastelands of Assam are crying aloud for colonists and even in densely populated Bengal there are extensive areas still awaiting reclamation.

Very little scientific agriculture is practised in India; yet experiments have shown that the careful selection of seeds, hybridization, and the systematic destruction of insect pests increase the yield of the land fourfold and fivefold within a very few years.

Then the Indians are held back by certain peculiar religious notions. Thus it has been estimated that, owing to the Hindu veneration of cattle, 16 million oxen and 8.5 million cows (out of 146 million cattle) are entirely superfluous.² Indian experts calculate that in some parts, owing to scruples against taking life, the cultivators gather in not more than a third of what they grow. One third goes to pigs, deer, panthers, and monkeys; another third to

¹ Pages 86-87.

² L. F. Rushbrook Williams, "India in 1924-25," pp. 239-240.

birds and insects. "One goes about India and sees the cultivator cheerfully providing sustenance for great birds, tribes of monkeys and other animals nearly as big as man and much more voracious, who give him no return and often do damage out of all proportion to what they consume." ³

Sir Valentine Chirol, a high authority on India, exposes ⁴ the long-descended social and religious customs which hang like a millstone round the Indian peasant's neck.

Not only have whole castes been taught to regard any form of manual labour as a badge of humiliating inferiority and to relegate their womenfolk to rigid seclusion and enforced idleness but, except in the lowest social strata, tradition demands that woman shall confine herself to the purely domestic duties of her household, and female labour, which in its many various forms plays so large a part in all the progressive communities of the modern world, is, if not forbidden, almost universally discountenanced and banned. Religious beliefs also oppose insuperable obstacles to the development of economic resources from which the land might easily derive great benefit. The Hindus worship the cow, and an Indian writer has recently estimated the loss which that worship involves every year for the whole country at more than four times the land revenue.

The Chinese, too, can spread themselves without wandering overseas. Observes our commercial attaché in Peking, Julean Arnold: ⁵

Although China is larger in area than Europe, or the United States including Alaska, yet six-sevenths of China's population is concentrated in one-third of its area. It is a mistaken idea

³ J. A. Spender, "The Changing East," 1926, p. 193.

⁴ "India," 1926, pp. 179-180.

⁵ Address, "China's Economic Resources," p. 178 in "Occidental Interpretations of the Far Eastern Problem," 1926.

to speak of China as overpopulated. There is in the lower Yangtze Valley, that is, in the Yangtze Delta region, an estimated population of forty million people in an area of fifty thousand square miles, or that similar to the state of Illinois. Mongolia, with an area equivalent to about one-and-a-half times that of the states east of the Mississippi, has a population of about two million, or less than two to the square mile. There are other regions of the Chinese Republic, comprising hundreds of thousands of square miles, more sparsely populated than any state in the American Union, due primarily to lack of economic transportation. There are also provinces in China which are cut away economically from the rest of the country, and which enjoy only a minimum of commercial intercourse.

Again, by adopting the best agricultural methods, the Chinese could be as eased as if hundreds of thousands of square miles of virgin soil had been placed at their disposal. Mr. Arnold points out: ⁶

One sees but little evidence of improvements in agricultural processes over many centuries. This is demonstrated by the fact that four-fifths of the population is engaged in providing the sustenance for the nation. In the United States less than 40 per cent of the people comprise the agricultural population, yet live better and produce a proportionately greater surplus for export than do the people of China. Irrigation, afforestation, deep plowing, scientific seed selection, rural credits, effective marketing, and animal husbandry are subjects which have received but little attention on the part of the government or through organized effort in any other direction. Agriculturally, China suffers badly through poor and inadequate irrigation, through deforestation, through lack of a knowledge of proper plowing methods, through little attention to seed selection, through usurious practices in financing the farming class, through a bad and uneconomic marketing system, through poor internal communications, and, in general, through lack of co-operative in-

⁶ "Occidental Interpretations of the Far Eastern Problem," p. 183.

dustry, in spite of the highly developed industrious and thrifty personal traits of character of the people.

Furthermore, before asking foreign peoples kindly to move over and make room for their overflow, the Chinese would do well to provide themselves with an efficient government. The emptiness of certain rich areas accessible to the crowded Chinese is due to the failure of their government to protect the colonists from the wild tribes and the Chinese bandits. The prosperity of the Western peoples excites envy in the breasts of the Celestials; yet how soon that prosperity would flit if they put up with what the Chinese tamely put up with! Mallory gives an instance: ⁷

A striking example of a disaster due to official negligence is the Yellow River flood of 1925 in western Shantung. Under the old régime the conservancy of the Yellow River along its whole course was unified under the control of one man who reported directly to the Emperor. The annual appropriation for the upkeep of the river dikes was about three million dollars. Now this unified control is no longer continued, and each provincial governor is charged with the maintenance of the river within his territory. These governors, however, apply the public funds to the support of military establishments or to the waging of war on neighboring satraps. Appropriations for river conservancy grow smaller and smaller. The break in the main south dike occurred simply from lack of proper upkeep, for only a few tens of thousands of dollars can have been spent in 1924; and most of this must have gone for organization expenses, not for works.

There is, in fact, in all Asia, just one people, viz., the Japanese, that has done practically all which could reasonably be expected of it to make the most of its country. The Japanese alone are in a position to make a strong case on ethical grounds against any nation barring out decent,

⁷ "China: Land of Famine," 1926, p. 72.

hard-working, well disposed persons coming from any section of civilized humanity.

It is true that the bringing to bear upon the untapped natural resources of Asia the necessary labor power, capital, technical knowledge, and managerial skill—all but the first still rather scarce in the Oriental world—will require time. It will afford no such ready relief to Asia's surplus millions as the simple expedient of invading *via* the steerage the established labor marts of Western countries and underbidding every one there; but it will not work such havoc upon others.

THE OUTTHRUST OF THE ASIATICS LIKELY TO BECOME STRONGER. From their appropriation of Western skill and science the Asiatics are gaining two benefits, one of which lessens population pressure among them while the other intensifies it. Railroads, irrigation works, improved agricultural methods, power capture, the opening up of mines, the setting up of factories enable more people to find support. On the other hand, famine relief, public health work, the damping down of epidemics, save lives and speed up the growth of numbers. Whether in the interval before birth-control moderates their prolificacy population pressure is to decrease or increase in the great hives of Asia depends on which of these contrary tendencies proves the stronger. No doubt the arch enemies of human life out in the Orient can be subdued more speedily than its latent economic resources can be brought into play—in which case the search for escape from man-stifled Asia will become desperate, and national pressure against the immigration dikes girdling the more desirable parts of the world will increase. The grave implications are obvious.

REGARD FOR THE FEELINGS OF THE EXCLUDED. The greatest care should be taken not to provoke hostility in the excluded peoples. The leaders of public opinion in the

Orient—certainly as benevolent and broad-minded as any in the world—should be made acquainted with the real ground of exclusion, viz., dread of population pressure. From our abundant vital statistics it should be easy to demonstrate why there is a population question, why it is rapidly becoming acute in many parts, and why its expression in swelling tides of overseas migrants threatens to set the nations by the ears. Once the lofty intellects of Asia realize the truth, they would be able sincerely to assure their people that the excluding nations are doing only what Japan or India or Iraq or Egypt would do were she in their place. Once exclusion is seen to be prompted by the instinct of self-preservation rather than by race disdain, it might be possible to negotiate treaties between the Western and the Oriental governments, each consenting to the barring of mass immigration by the other.

There should be no barrier checking the flow of culture-bearers or culture-seekers. Asiatic transients bent on business or pleasure should be admitted. Culture-bearers from the Orient should meet only with welcome. Let a Noguchi, a Kitasato, a Bose, a Tagore, be greeted with garlands. Moreover, let the way be smoothed for Oriental culture-seekers. The U. S. Immigration Act of 1924 wisely provides that a youth at least fifteen years of age coming solely for study in an accredited educational institution may be admitted as a non-quota immigrant. Such students might well be provisionally admitted with a year in which to learn our language and gain admission to one of our colleges; they should be free, too, to earn their way through college without being classed as laborers liable to deportation. Thus a liberal spirit may make it possible for the low-pressure peoples to protect themselves against inundation from countries of high population pressure without bringing on a schism between the two great segments of

humanity. Asiatic governments could reciprocate by extending a like hospitality to the missionaries, engineers, managers, and tourists coming from the West.

Lest Asiatics become knit together by a sense of common grievance, it may be expedient to admit those bringing money enough to live upon. This principle underlies the immigration policy of Great Britain to-day, for in the face of chronic unemployment the British are concerned chiefly to reserve their labor market for their own workers. While the immigration of some thousands of propertied families of the yellow or brown race would assuredly create problems, it would not menace the Occidental standard of living nor displace native labor. Our treatment of the alien has never depended on the thickness of his purse; nevertheless, some day it may be found prudent to alter our policy. If the wealthy know that there is no bar against their settling down in a Western country, the Orientals will be less solidary in resenting Western immigration policy.

To add imperialistic aggression to a policy of exclusion would break the back of Oriental patience. If, besides barring the tides of men from Asia, the Western powers show themselves cold to nationalistic aspirations in their Asiatic subjects and high-handed in dealing with Oriental governments, the exasperation of the Orient may reach a dangerous pitch. Such anomalies as the control of the powers over the customs tariffs of China and the extra-territoriality enjoyed by the foreigners settled in China should be relinquished gracefully, once it is certain that they have become odious to the Chinese.

Western governments furthermore should be chary of lending themselves to the promotion of schemes by avaricious groups of their nationals to get hold of the natural wealth of the Oriental countries. They should be careful,

too, not to encroach upon the sovereign rights of an Asiatic state when supporting the just claims of concessionaries or creditors among their nationals.

It is most desirable that India remain a member of the British-Indian Commonwealth of Free Nations. In case India left this constellation she might be led to make common cause with other Oriental powers in attempting to break down the Great Barrier by military means. A League of Congested Peoples would organize humanity in two huge camps, stimulate armament rivalry and militarism, perhaps even bring on another World War. As comrade of Great Britain and the Dominions, India will make more easily the transition from Orientalism and can serve to link East and West. Their constitutional relationship makes it impossible now for India and South Africa, India and Australasia, to come to blows over the immigration question.

The Christian missionary work in Asia should be preserved as a precious living bond between Eastern and Western humanity. Not only are missionaries by their unselfish educational and medical services producers of friendliness, but they give the Orientals a better impression of Western character than they derive from contact with our officials and traders. Moreover they undermine ancient ideas and social customs which delay the arrival of an adaptive fertility in the Orient.

HOW LONG WILL THE GREAT BARRIER LAST? The Great Barrier is not to be looked upon as a fixture in the human landscape. Such a deliberate severance of mankind is a deplorable thing, to be abandoned as soon as practicable. The Barrier is set up to protect the high-standard-of-living peoples from being overrun and displaced while the Asiatic peoples are in course of accommodating their religious ideas and social customs to the demands of a civili-

zation which proposes to have no subjection of women, no prepuberty marriages, no propagation from physically immature females, no infanticide or abortion, no high infant mortality, no unschooled ignorant masses, no congested labor market, no degrading mass poverty, no famines in the train of crop failures, no multitudes hanging on to life by their finger-tips and dropping into the abyss at a gossamer touch. When it has served its purpose let it be removed.

How long it will take the Orient to make this adjustment no one can predict. Some parts, at least, will require the rest of this century and most of the next. Certain more progressive Asiatic peoples, however, may achieve the adjustment within this century. When such a people has not only arrived at a well controlled fertility with a cautious rate of increase, but has so developed its economic possibilities or reduced its population that its standard of living approximates that of the excluding countries, the Barrier should be removed so far as that people is concerned.

Unless, to be sure, the future should demonstrate that interchanges of population between racially unlike peoples—which leads to crossing—is biologically undesirable. In such case, of course, the Barrier, being maintained from both sides, would cease to be a cause of offence.

THE END

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